AMSTRAD

009100

≡ FUNAI TVR-1400

TVR-2
TELEVIDEO
SERVICE MANUAL

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TECHNICAL SPECIFICATION

Format	: **VHS (PAL)**
Video Recording System	: Two head rotary helical-scan system
Tape Width	: 12.7mm
Tape Speed	: 23.39mm/sec. standard play/ 11.7mm/sec. long play (extended play)
Aerial Input	: 75 ohms unbalanced
Video Input/Output	: BNC connector x 2
Audio Input/Output	: RCA connector x 2
CRT	
CRT Type	: 14 inch in-line gun, 90° deflection tube
Receiving Channel	: 21 - 69
Preset Channel	: 16 stations
Speaker	: 14 inch round
Video	
Input	: 0.5 to 2.0V
Output	: 1.0 (75 ohms unbalanced)
S/N Ratio	: More than 46 dBs
Audio	
Input	: -20dBs (line input)
Output	: -3dBs (line output)
S/N Ratio	: More than 40 dBs
Mains Voltage	: AC240V
Mains Frequency	: 50Hz
Power Consumption	: 86W
Dimensions	: 370(W) x 410(H) x 365(D) mm
Weight	: 16Kg (approx)

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SAFETY TEST

Please note: When any work is carried out on a set, the following safety tests must be carried out to ensure continued electrical safety.

1). Flash Test
Test at 4kV between the live and neutral of the mains lead joined together and ALL accessible metal points on the exterior of the set.

2). Insulation Resistance Test
Test between the live and neutral of the mains lead joined together and ALL accessible metal points on the exterior of the set to show a resistance of at least 4Mohm.

DISASSEMBLY INSTRUCTIONS

1 HOW TO REMOVE THE WHOLE VIDEO CASSETTE DECK MECHANISM– (Figure 1)

Remove 4 screws (A) on side.(2 screws on each side)
Drawing out the whole video cassette deck.
Disconnect 4 connectors on back.

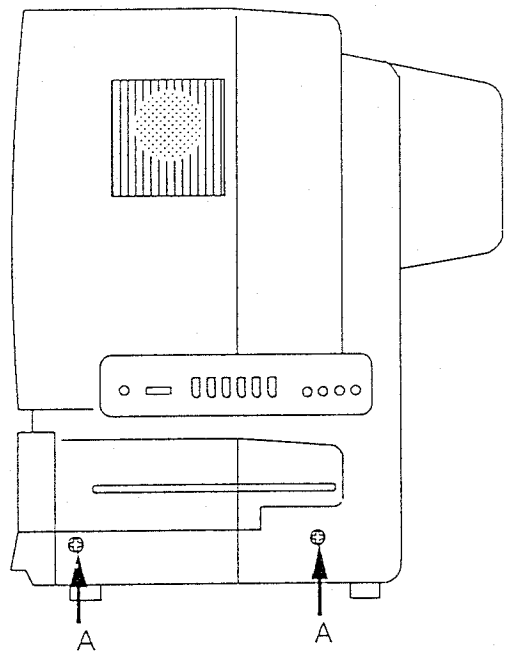

Figure 1

2 HOW TO REMOVE REAR BACK CABINET– (Figure 2)

Remove 7 screws (B).

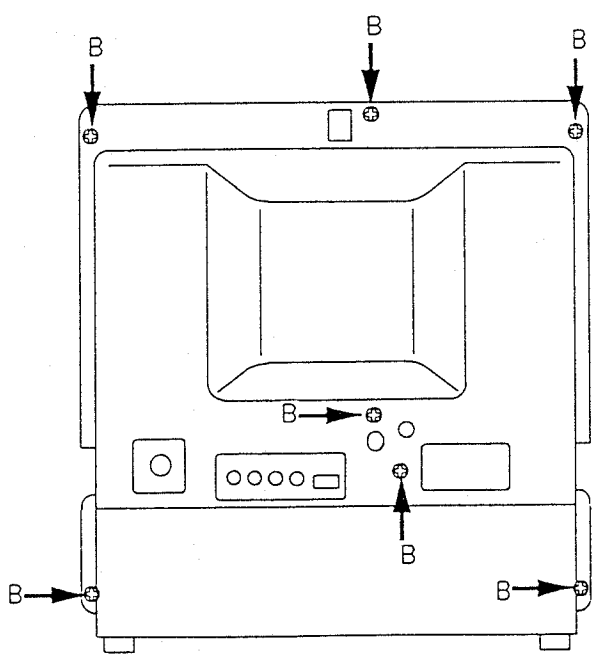

Figure 2

3 HOW TO REMOVE TV CHASSIS/MAIN PCB ASS'Y– (Figure 3)

Disconnect related 4 connectors (C), clamp (D), anode cap (E) and CRT PCB (F).
NOTE : Must discharge anode cap before disconnecting it.
Remove 2 screws (G) and draw out the TV chassis/main PCB ass'y.

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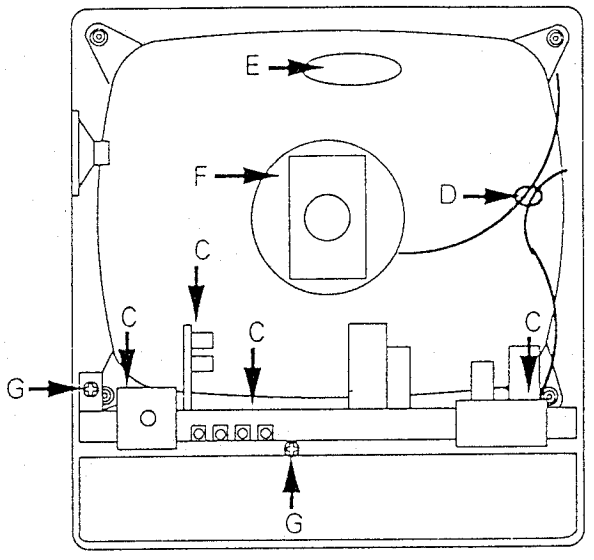


Figure 3

4 HOW TO REMOVE SPEAKER– (Figure 4)

Remove glue around the speaker flame and draw out.

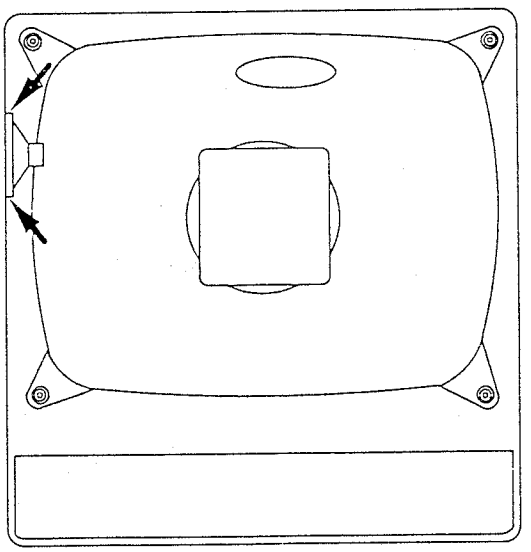


Figure 4

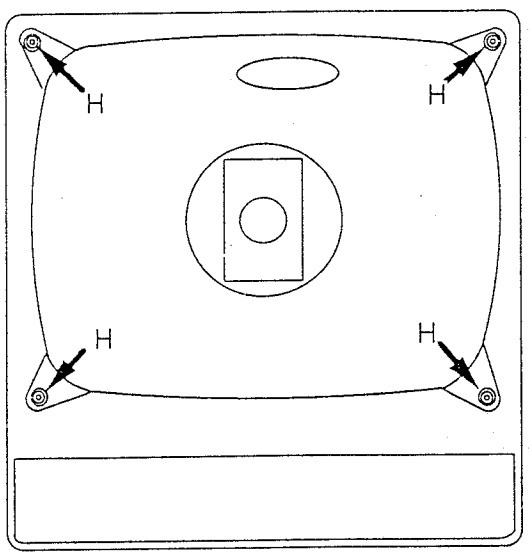


Figure 5

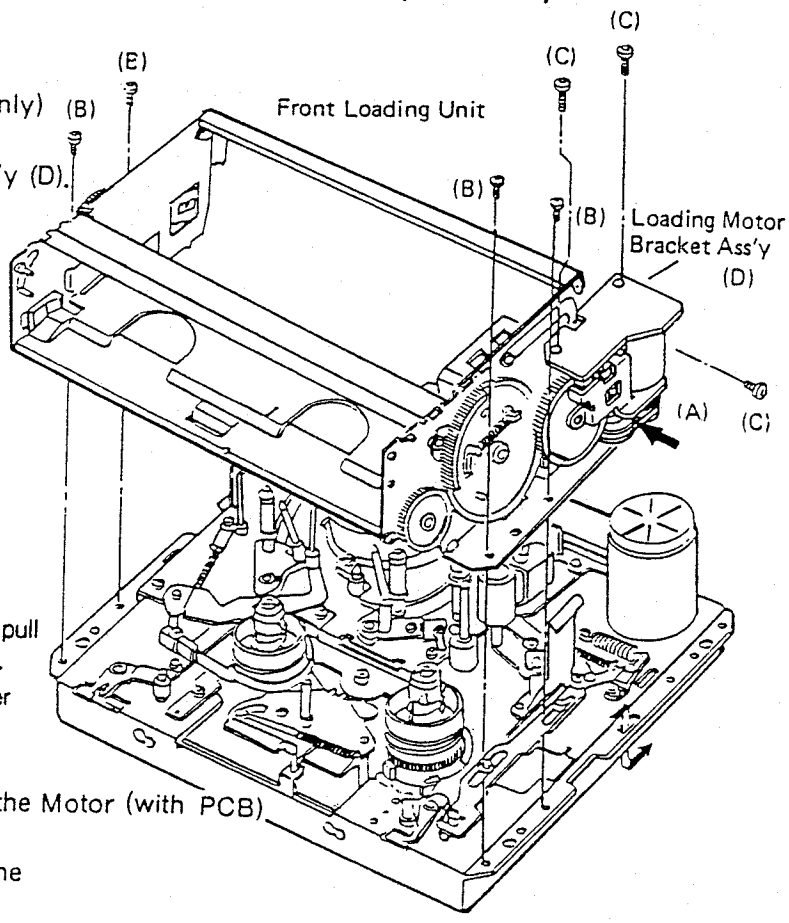
5 HOW TO REMOVE CATHODE RAY TUBE (CRT) – (Figure 5)

Remove 4 nuts (H).

(VCR SECTION)
DISASSEMBLY INSTRUCTIONS (DECK)

[1] FRONT LOADING UNIT

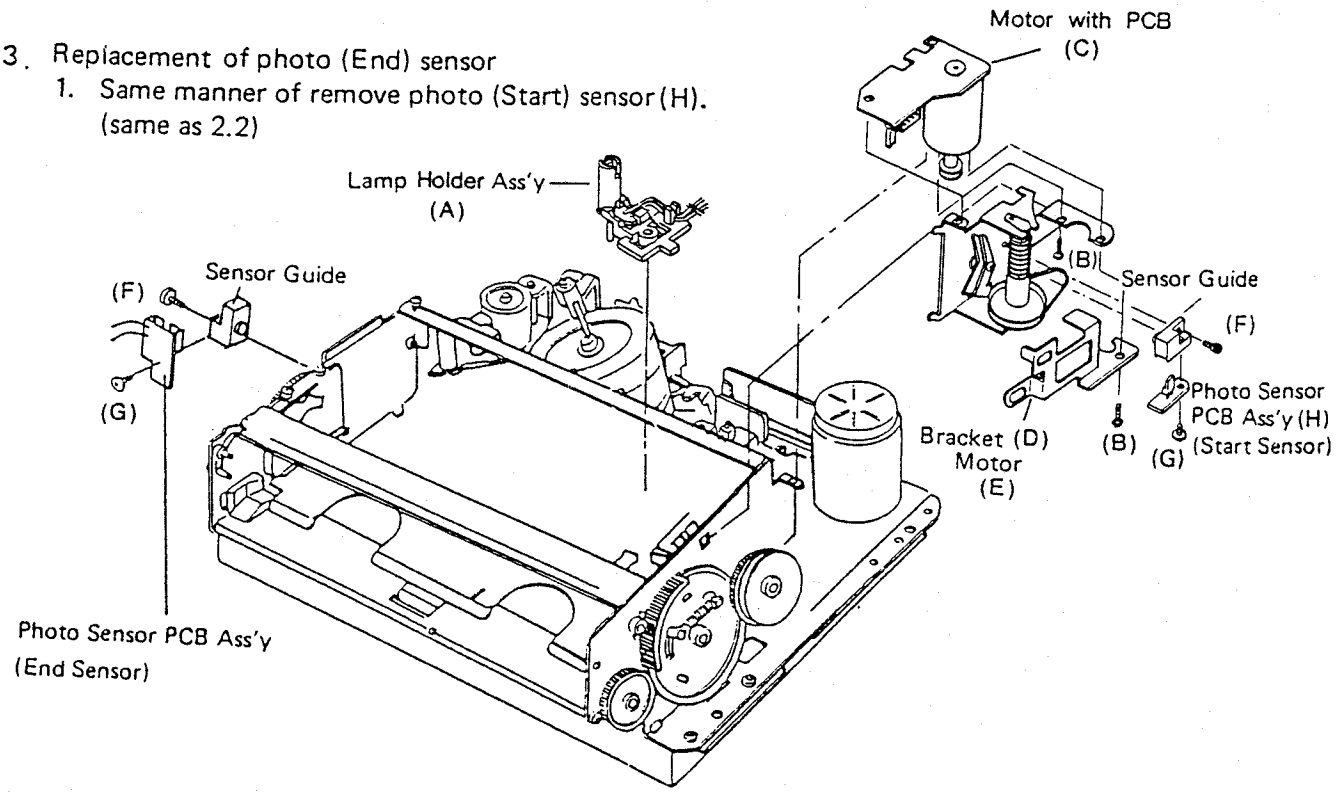
1. Remove 4 screws (B).
2. Take off the hook (A). (Right side only)
3. Remove 3 screws (C).
4. Take off Loading Motor Bracket Ass'y (D).



[2] PHOTO SENSOR

1. Replacement of Lamp Holder Ass'y.
   (Sensor Lamp)
   1. Hold lamp holder ass'y body(A) and pull up to remove the hook from chassis.
   2. Turn the lamp holder ass'y to counter clockwise and take out holder ass'y.
2. Replacement of photo (Start) sensor
   1. Remove 2 screws (B) and take off the (C)and Bracket (D), Motor(E).
   2. Remove 1 screw (F) and take off the Sensor Guide.
      Remove 1 screw (G) and take off the Photo Sensor PCB Ass'y.

3. Replacement of photo (End) sensor
   1. Same manner of remove photo (Start) sensor(H). (same as 2.2)



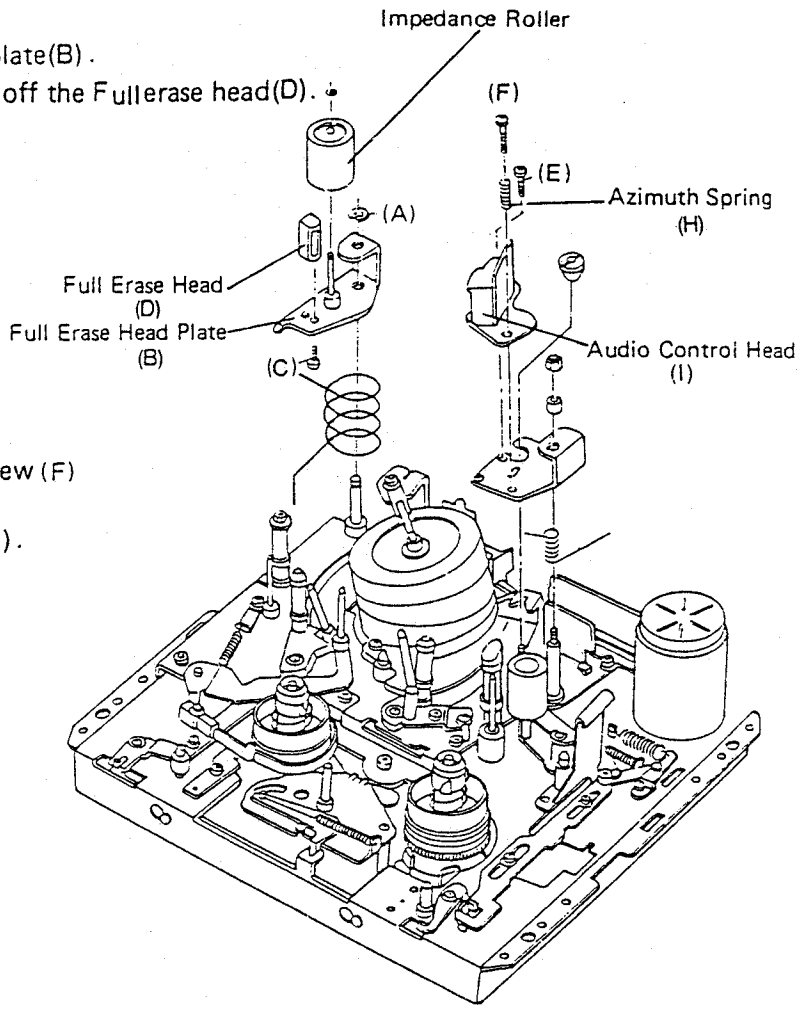
[3] FULL ERASE HEAD/AUDIO CONTROL HEAD

Erase Head

1. Remove E-ring (A).
2. Pull out the Full Erase head plate(B).
3. Remove 1 screw (C) and take off the Fullerase head(D).

Audio Control Head

1. Remove 1 screw (E) and 1 screw (F) and azimuth spring(H).
2. Remove audio control head(I).



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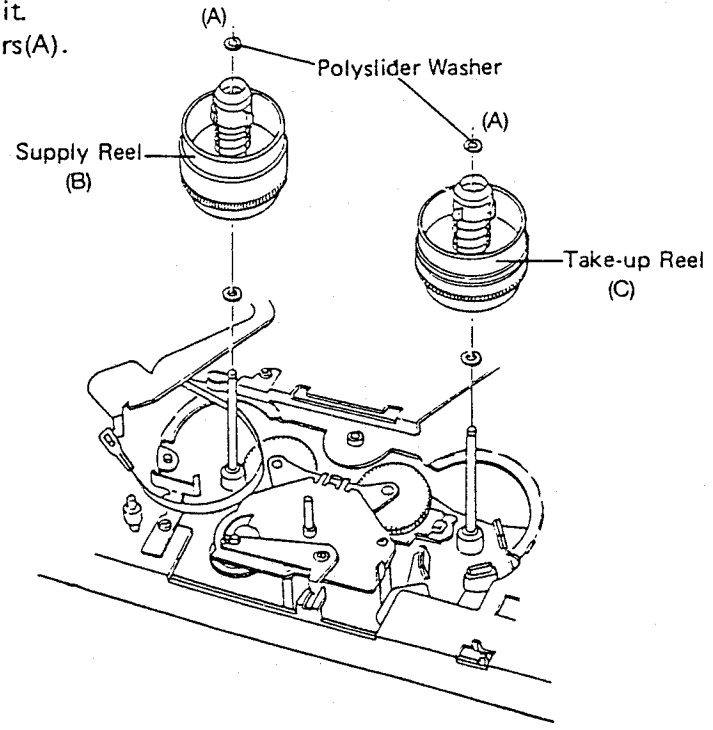
[4] REEL (SUPPLY & TAKE-UP)

(a) Remove front loading unit.

1. Remove polyslider washers(A).
2. Remove the reels(B), (C).



[5] GEAR HOLDER ASS'Y/CLUTCH

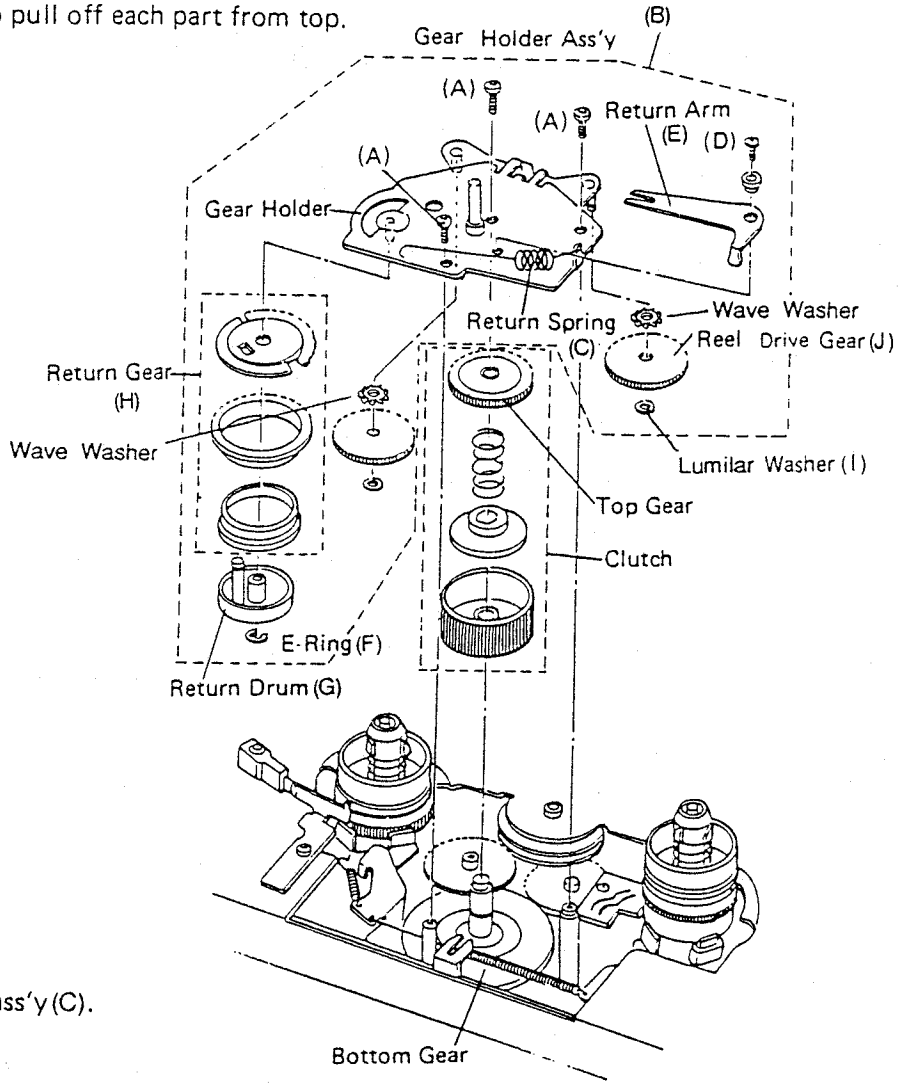
Gear Holder Ass'y

(a) Remove front loading unit.

1. Remove 3 screws (A), and gear holder ass'y(B).
2. Remove return spring(C).
3. Remove 1 screw (D) and return arm(E).
4. Remove E-Ring (F) and return drum(G) and return gear (H).
5. Remove polyslider washer (I) and then take off the reel drive gear(J).

Clutch

Top gear is pressed to insert so pull off each part from top.

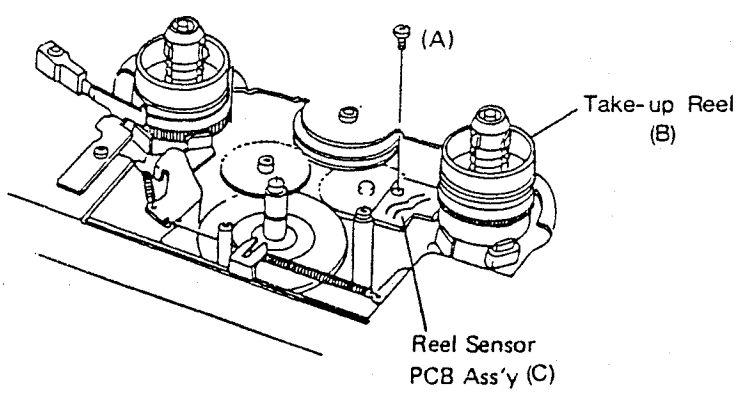


[6] REEL SENSOR

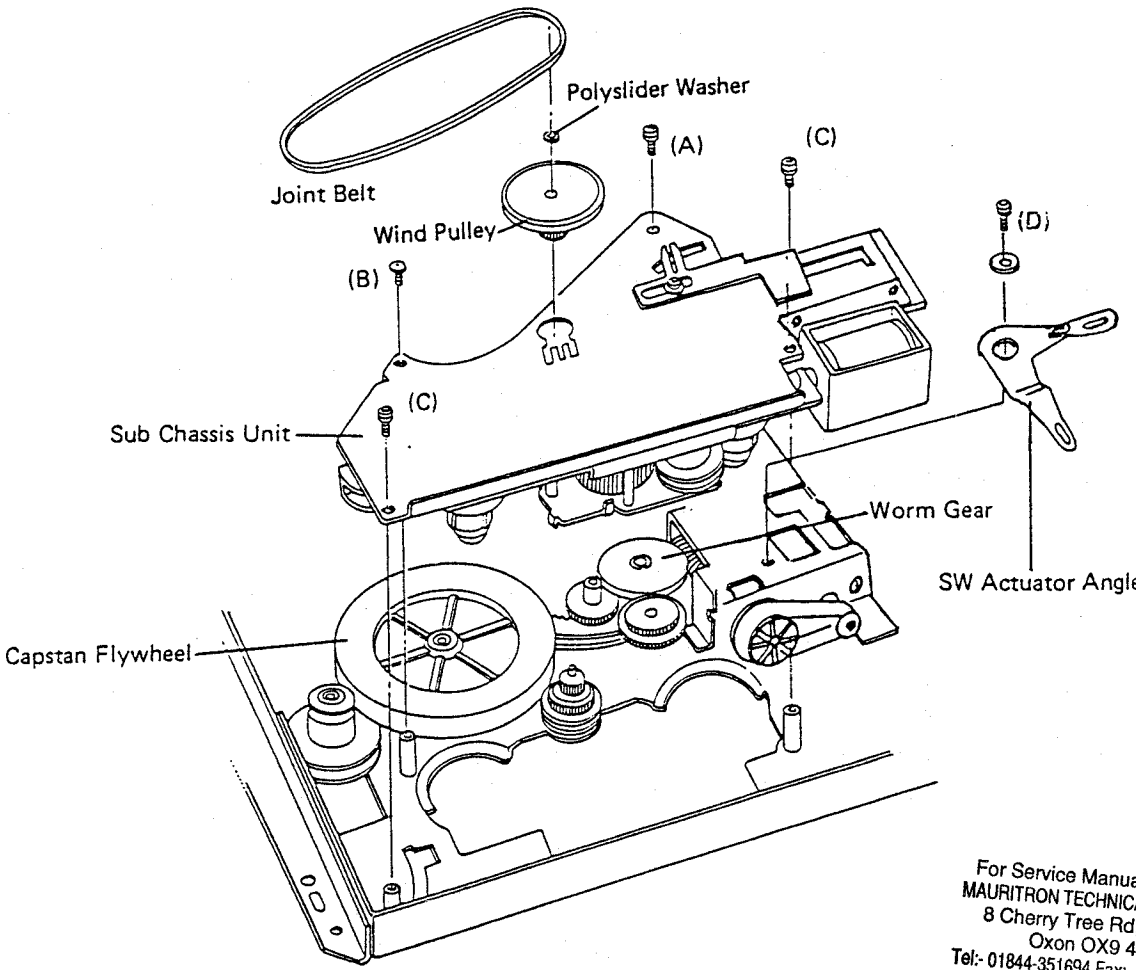
(a) Remove front loading unit.

(b) Remove gear holder ass'y.

1. Remove 1 screw (A).
2. Remove take-up reel(B).
3. Remove reel sensor PCB ass'y(C).



[7] SUB CHASSIS



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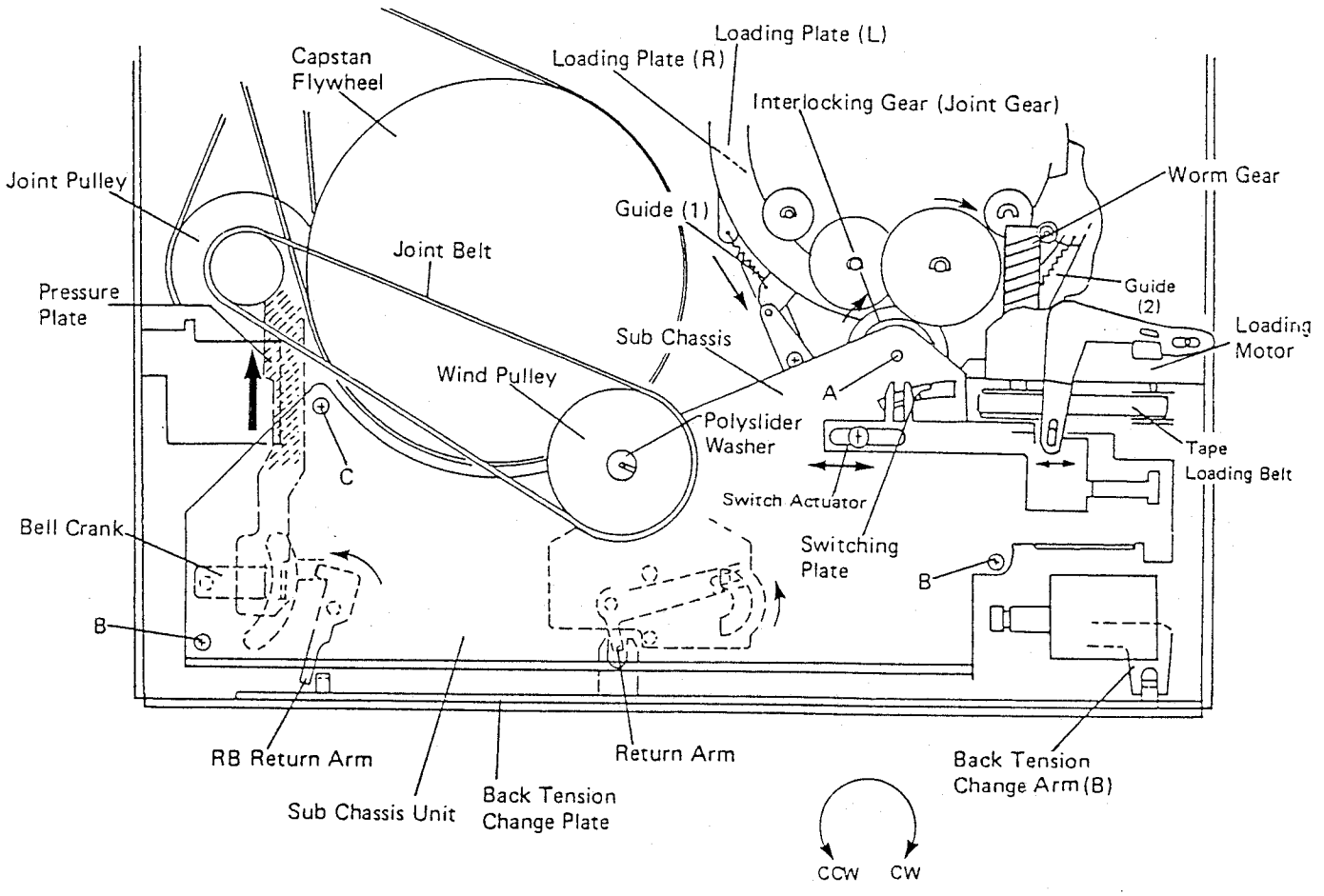
Take out of Sub Chassis Unit

1. Turn the Capstan Flywheel clockwise more than three times. (Because the levers, etc. are set at neutral.)
2. Remove the Joint Belt.
3. Remove the Polyslider Washer.
4. Pull out the Wind Pulley.
5. Remove 1 screw (D) and take off the SW Actuator Angle.
6. Remove 4 mount screws from sub chassis. (Ax1, Bx1 Cx2)
7. Take out the Sub Chassis Unit.

Mounting of Sub Chassis Unit

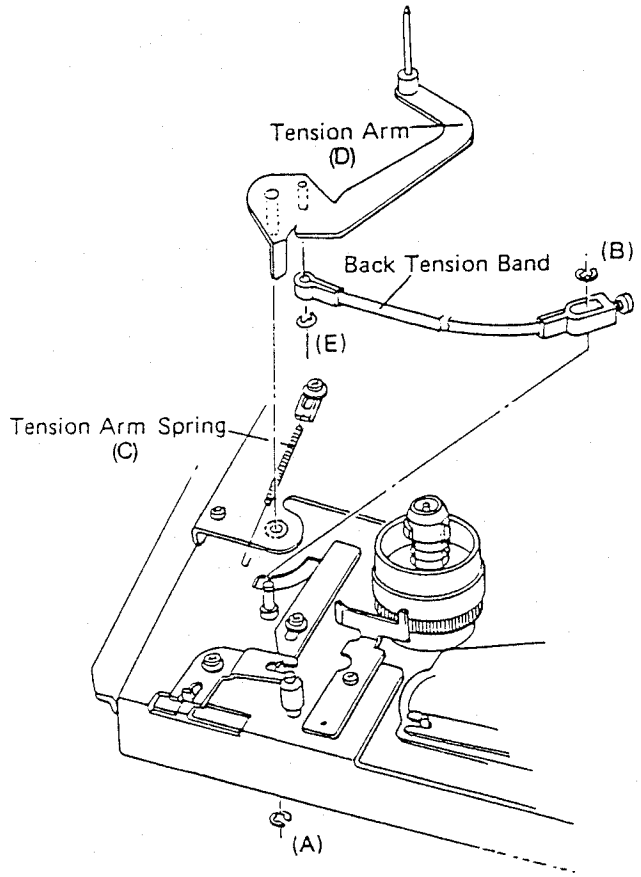
1. Turn the Return Arm in the direction of arrow mark.
2. Move the Back Tension Change Plate to the right direction extremely.
3. Turn the RB return arm to the direction of arrow mark extremely.
4. Turn the Loading Plates (L) and (R), and stop them at the position of hitting the wall of groove or just stop.
   This work is done by turning the pulley of the Worm Gear jointed to the Loading Motor.
5. Turn the Interlocking Gear in the direction of arrow mark (counterclockwise) extremely.
6. Mount the Sub Chassis Unit. At this time, make the band brake of back tension fit to the supply reel. (Top side)
7. Shake the Switch Actuator to right and left in order to confirm the engagement of interlocking gear.
8. Slide the Pressure Plate in the direction of arrow mark in order to connect the Pressure Plate with the Bell Crank.
9. Mount the Sub Chassis Unit with 4 small screws.
   (A x 1, B x 2, C x 1)
10. Insert the Wind Pulley.
11. Set the Polyslider Washer.
12. Mount the Joint Belt.
13. Confirm that the Return Arm is set to the calw of the Back Tension Change Plate.
    It is OK that following two operations are confirmed by turning the capstan flywheel.
    (1) When the Capstan Flywheel is turned counterclockwise (CCW), the Back Tension Change Arm moves to the left.
    (2) When the Capstan Flywheel is turned clockwise (CW), the Back Tension Change Arm moves to the right.



[8] TENSION ARM ASS'Y

Remove front loading unit.

1. Remove E-ring (A).
2. Remove E-ring (B).
3. Remove tension arm spring(C).
4. Remove tension arm (D).
5. Remove E-ring (E).



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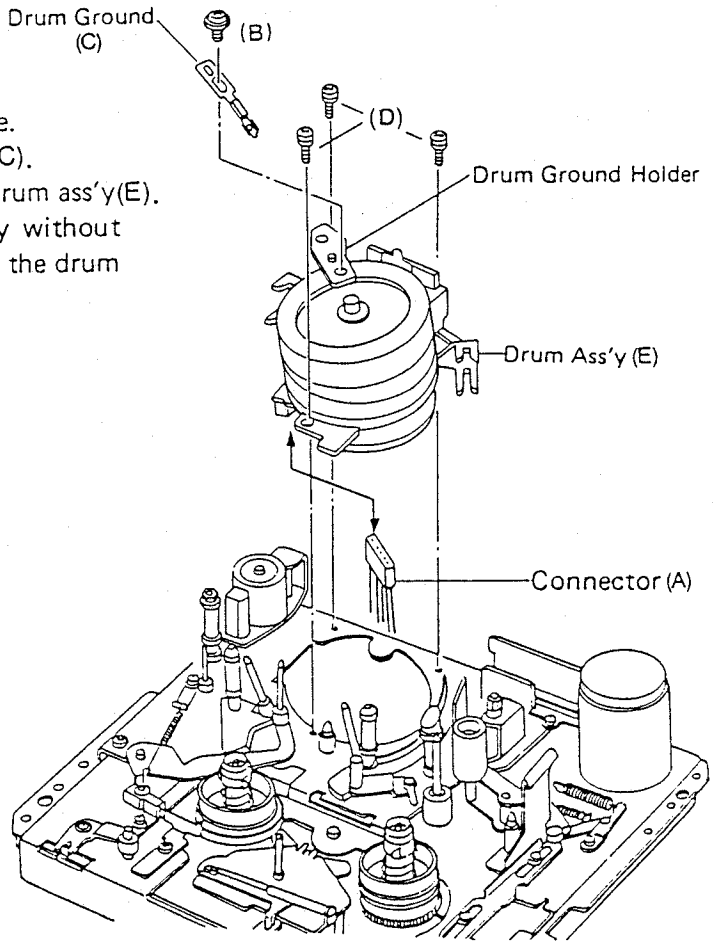
[9] DRUM ASS'Y

(a) Remove front loading unit.

1. Remove connector (A) from bottom side.
2. Remove a screw (B), and drum ground(C).
3. Remove 3 screws (D) and take off the drum ass'y(E).

Remark: Remove the drum ass'y carefully without any damage. Especially do not hit the drum ground holder.

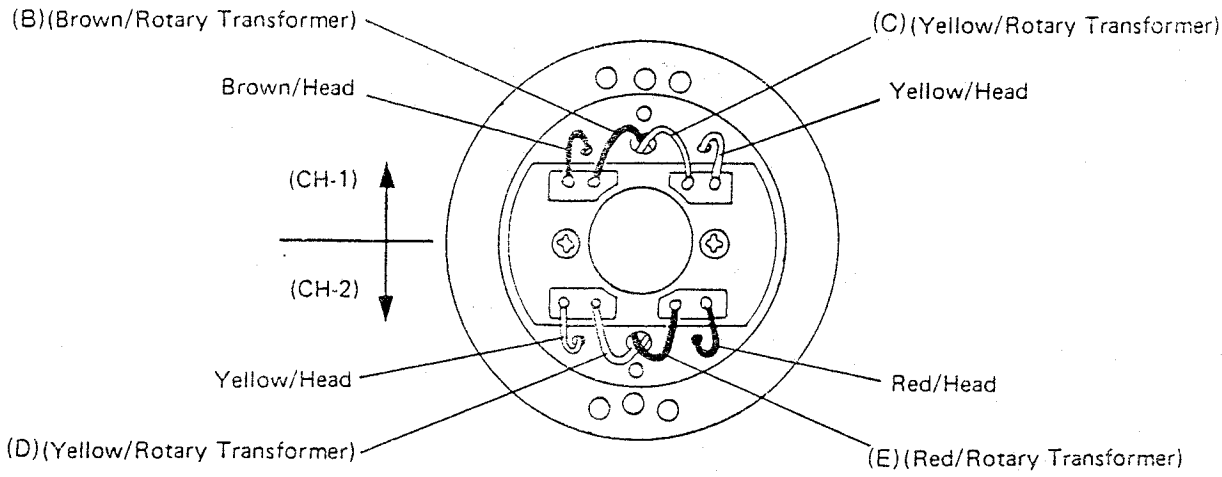


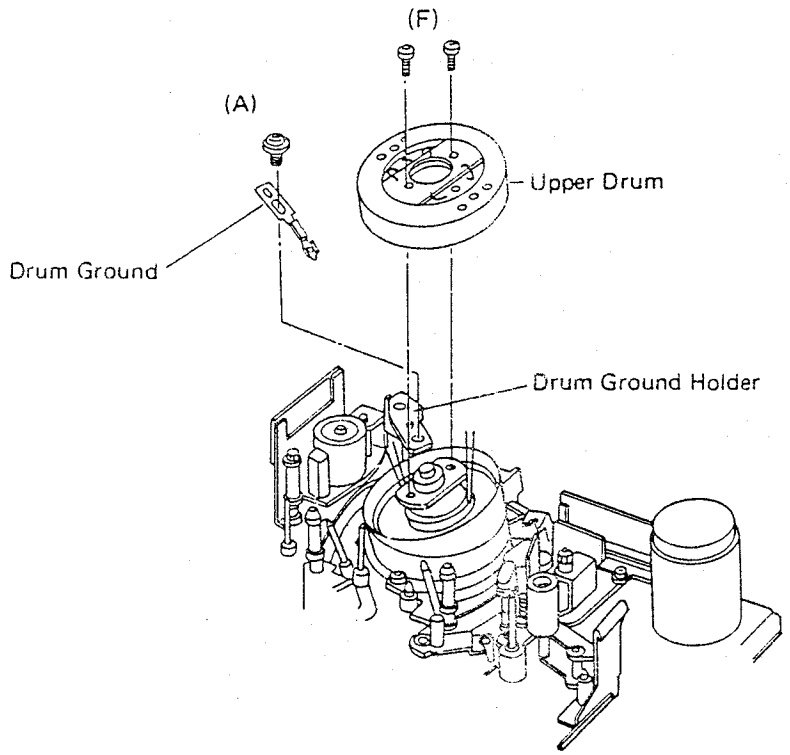
[10] UPPER DRUM

Remove front loading unit.

1. Remove 1 screw (A), and drum ground.
2. Resolder rotary transformer wires (B), (C), (D) and (E).
   Do not unsolder head wires.
3. Remove 2 screws (F).

Remarks: 1) Use gloves and do not touch with bare finger or dust to drum face.
2) If the video head is defective, replace the complete upper drum with head.





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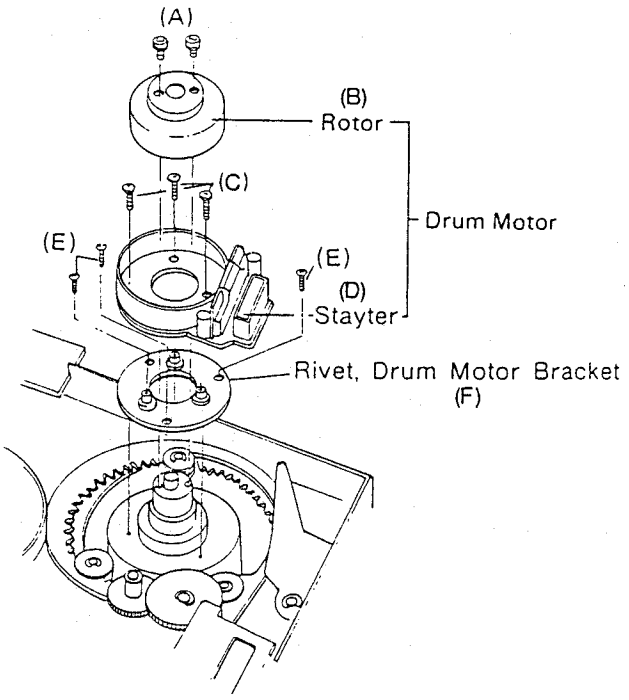
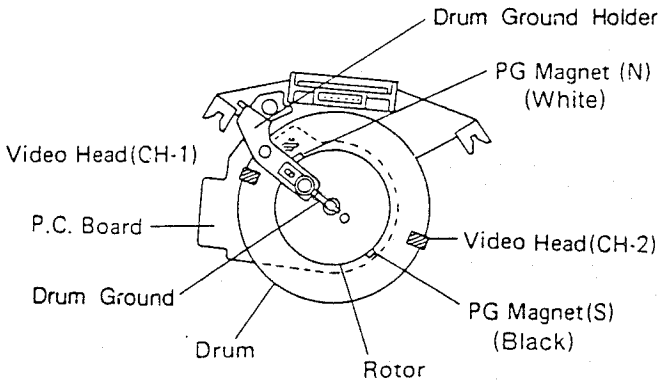
[11] DRUM MOTOR

1. Remove 2 screws (A).
2. Remove the rotor (B).
3. Remove 3 screws (C).
4. Remove stayter(D).
5. Remove 3 screws (E).
6. Remove Rivet, Drum Motor Bracket(F).

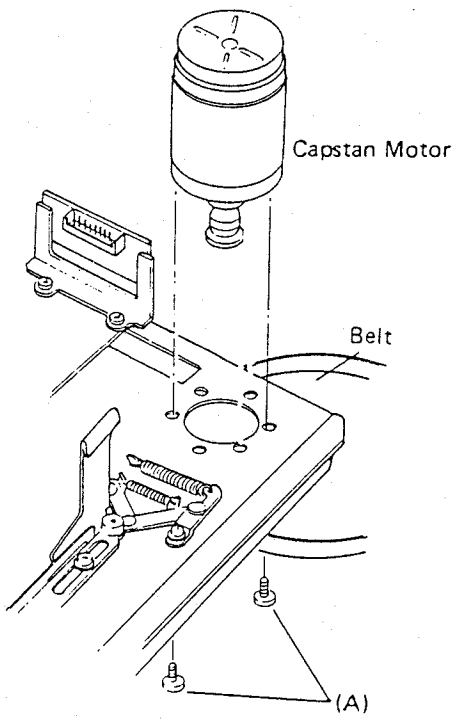




DRUM Ass'y (Top View)

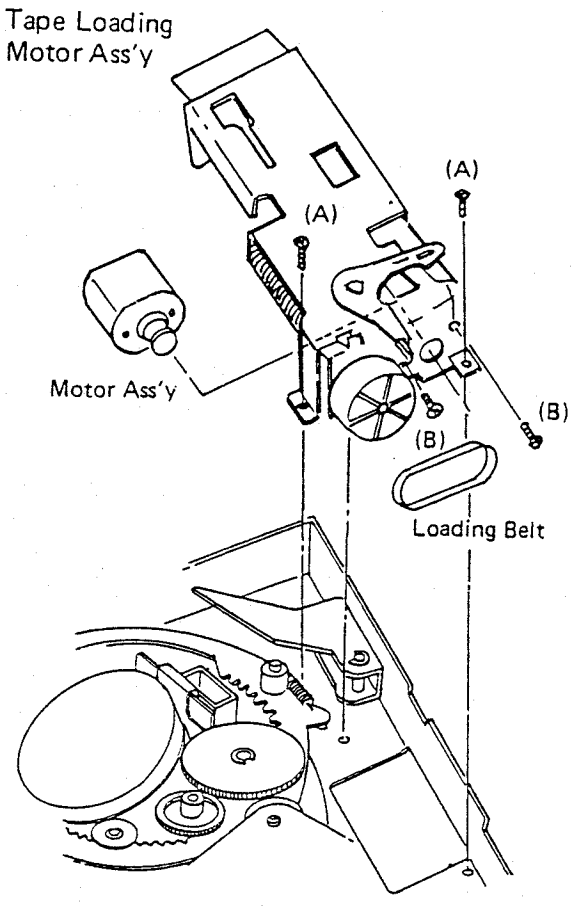
[12] CAPSTAN MOTOR

1. Take off the belt from capstan motor.
2. Remove 2 screws (A).



[13] TAPE LOADING MOTOR

1. Remove 2 screws (A).
2. Take off Tape Loading Motor Ass'y .
3. Take off Loading Belt.
4. Remove 2 screws (B) and take off Motor Ass'y.



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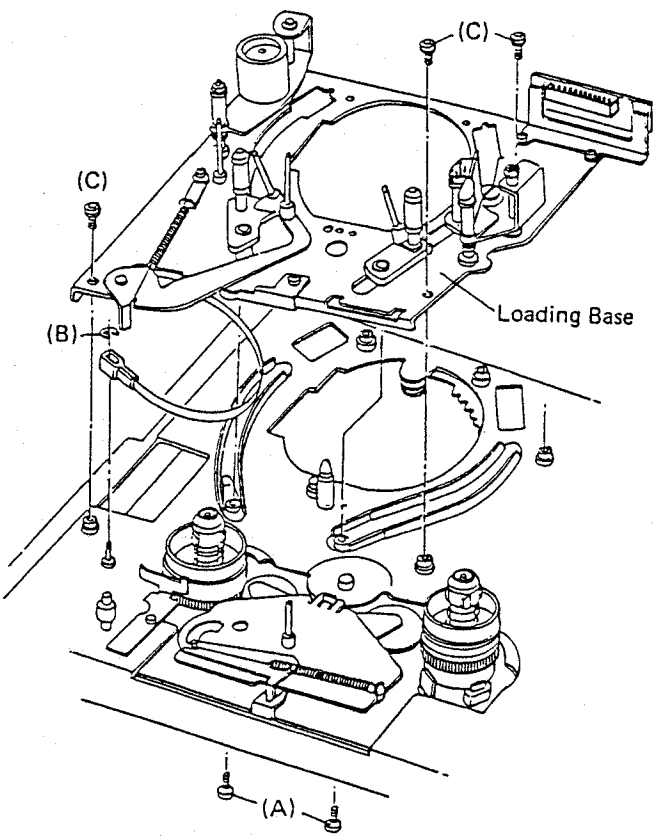
[14] LOADING BASE

1. Remove Motor Ass'y and Drum Ass'y.
2. Remove 2 screws (A) from bottom.
3. Remove E-ring (B).
4. Remove 3 screws (C).
5. Take off the Loading Base.



[15] LOADING GEAR

1. Remove Sub-Chassis Unit Flywheel and Front Loading Motor Ass'y.
2. Remove E-ring (A) and take off Gear Ass'y.
3. Remove E-ring (B) and take off Gear Ass'y.
4. Remove E-ring (C) and take off Gear Ass'y.
5. Remove 3 E-rings (D), 2 Plate Washers (E) and 1 Plate Washer (F).
6. Remove 2 screws (J).
7. Take off the Loading Plate (L).
8. Take off the Joint Gear (K), 2 Guide Gears (G), Guide Roller (H) and Plate Washer (I).
9. Take off the Loading Plate (R).
10. Take off 2 Guide Gears (G') and Guide Roller (H').

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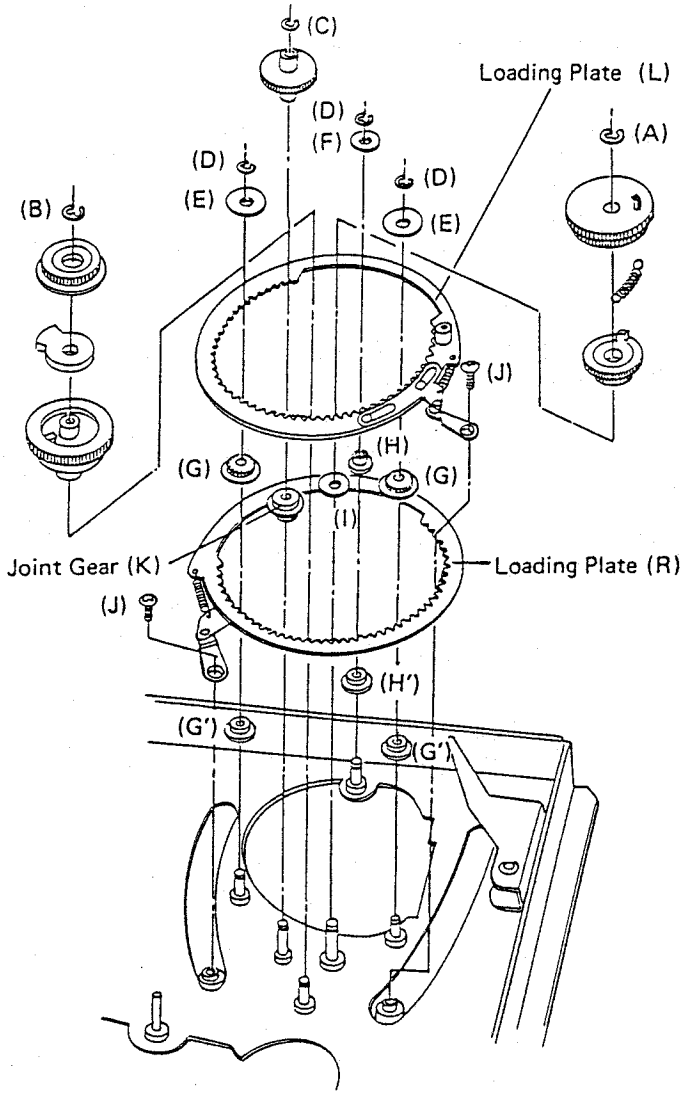
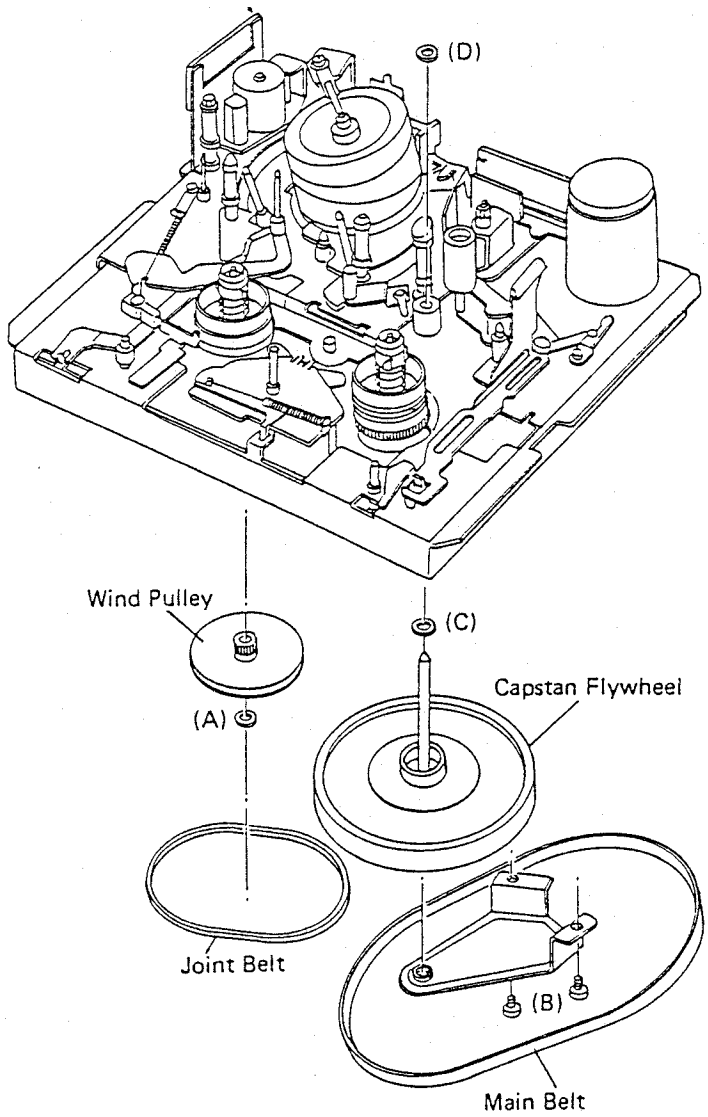


[16] CAPSTAN FLYWHEEL

1. Remove Front Loading Unit.
2. Take off the Joint Belt and Main Belt.
3. Take off the Polyslide Washer (A) and Wind Pulley.
4. Remove 2 screws (B).

Remark: Do not miss the washer (C) and (D) when pull out the capstan flywheel.



[17] FRONT LOADING WORMWHEEL UNIT

- DISASSEMBLY
  1. Remove E-ring (A).
  2. Remove Wormwheel Ass'y. (Wormwheel, Spring Friction, Gear Friction.)
- ASSEMBLY
  1. Turn Lift Gear (R) fully counterclockwise.
  2. Restore Wormwheel Ass'y to Stud.
     Match Lift Gear (R) to Wormwheel Hole as illustrated.

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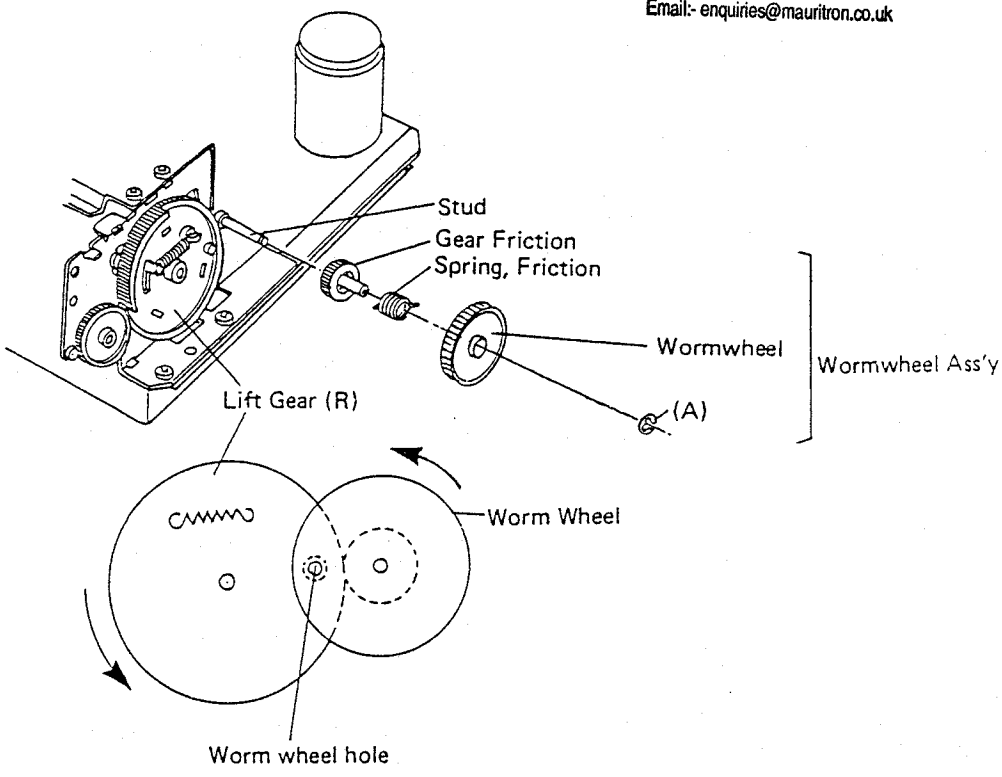

MECHANICAL ADJUSTMENT JIG AND TOOLS

Item	Part No.	Adjustment
Torque Meter	VHT-063	Back Tension
Driver (Special)		Control Head Tape Guide Height
Wrench M2 Hexagon		Guide Roller Setting
Wrench M3 Hexagon		A/C Head Tilt
Mirror		Tape Transportation Check
Box Driver M3		Guide Pole A/C Head Height
Alignment Tape	F6-N	FM Output Level/Azimuth Adjustment
Alignment Tape	F6-A	Audio Output Adjustment

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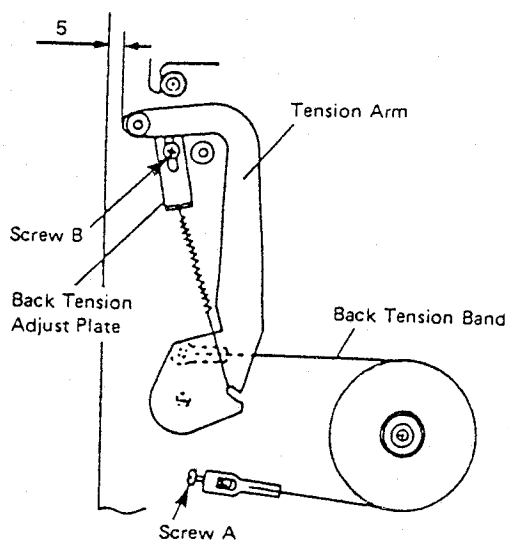
1) **Tension Arm Position**
   1. Push Play button and start without video cassette tape.
   2. Turn screw A and match a tip of tension arm to marking on the loading base.

2) **Back Tension**
   1. Load cassette torque gauge (VHT-063) and push PLAY button.
   2. Loosen screw B and slide back tension plate, until gauge indicates 24 ± 5 g-cm.
   3. Confirm proper operations of Interlocking Gear and switching plate and Mounting position of Loading switch.

   Note: Removal of the front loading ass'y is not necessary at both disassembly and assembly.



DECK ADJUSTMENT

1. Audio/control head height and azimuth adjustment.
   1. Connect CH1 of oscilloscope to AUDIO OUT. (Fig.1)

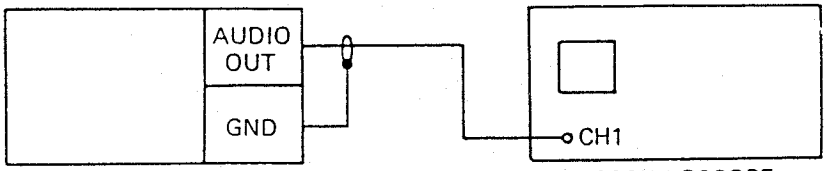
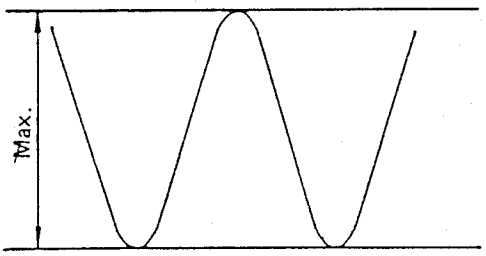
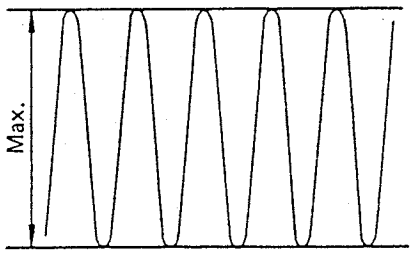


Fig. 1

2. Playback test tape F6-A 1kHz Audio Signal.
3. Adjust nut Ⓐ to obtain maximum audio output level (Fig. 4)
4. First, decline the head toward the nut Ⓐ by turning screw Ⓒ. Then turn the screw Ⓒ reversely and slowly to obtain the maximum audio output level (Fig. 4).
5. Check that smooth tape transportation at the take-up guide pole. Especially inspect no tape slack and wrinkling. If these problem occur re-adjust Ⓐ and Ⓒ. (Fig. 4)
   Playback test tape F6-N (6 kHz Audio Signal)
6. Adjust screw Ⓑ to obtain maximum audio output level. (Fig. 4)



1 kHz Fig. 2



6 kHz Fig. 3

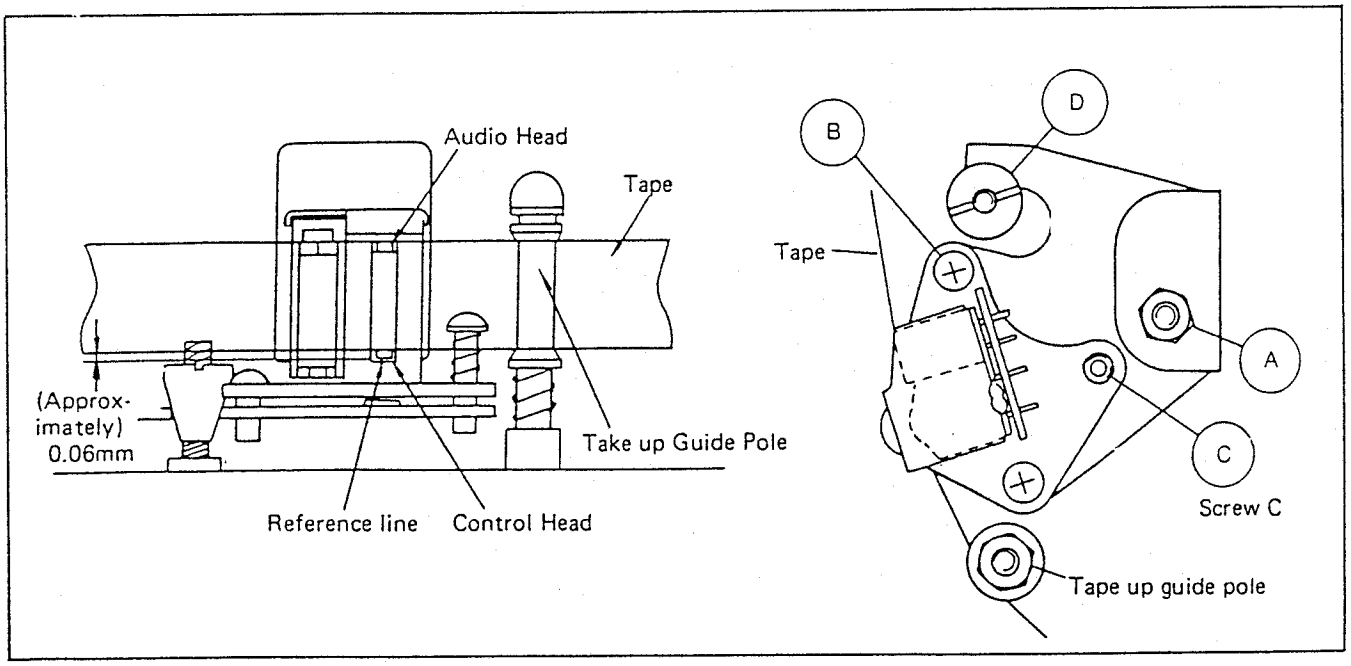


Fig. 4 A/C Head Adjustment

2. FM peak adjustment (Fig. 5)
   1. Connect CH1 of oscilloscope to TP5.
   2. Connect CH2 of oscilloscope across TP13 and Ground.
   3. Set oscilloscope to TRIGGER mode.

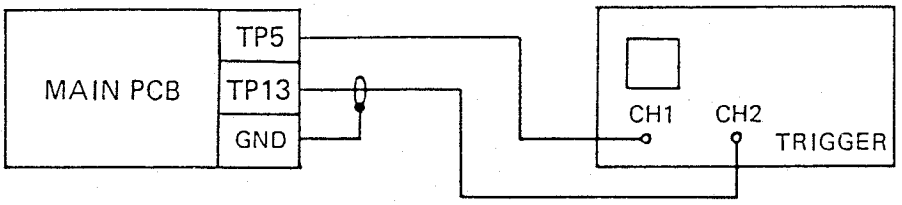


Fig. 5

   4. Playback test tape F8-N (stair step without color signal).
   5. Adjust screw Ⓓ to obtain maximum FM output level. (Fig. 4,6).

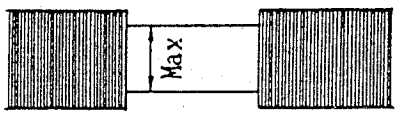


Fig. 6

3. FM waveform adjustment (Fig. 5)

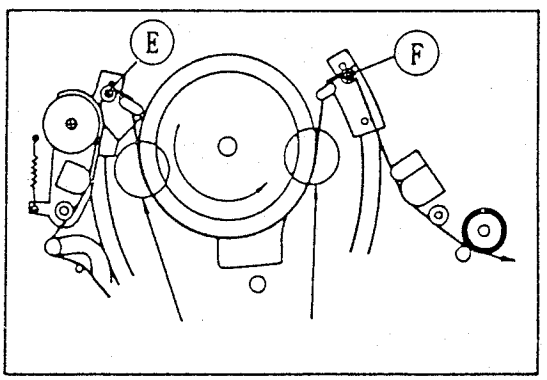


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Fig. 7

   1. Connect CH1 of oscilloscope to TP5.
   2. Connect CH2 of oscilloscope across TP13 and GND.
   3. Set oscilloscope to TRIGGER mode.

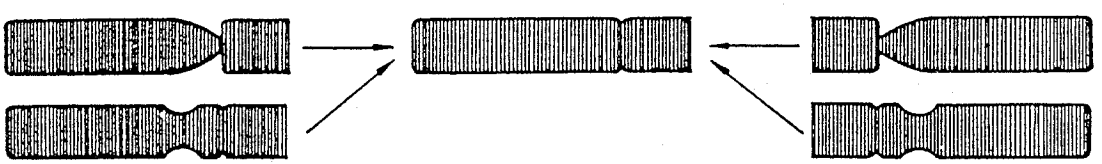

Fig. 8 Fig. 9 Fig. 10

   4. Playback test tape F6-N (stair step without color signal).
   5. If the FM waveform observed by oscilloscope is as same as shown in Fig. 8, adjust screw Ⓕ until waveform becomes as shown in Fig. 9.
   6. If the FM waveform observed by oscilloscope is as same as shown in Fig. 10, adjust screw Ⓔ until wave form becomes as shown in Fig. 9.

NOTE: 1. Confirm that Electrical Adjustment (Video Head Switching Point and CTL Preset) has been done before Deck Adjustment.
2. Deck Adjustment should be done with Tracking Volume at the center position.

EXPLODED VIEW (DECK 1)

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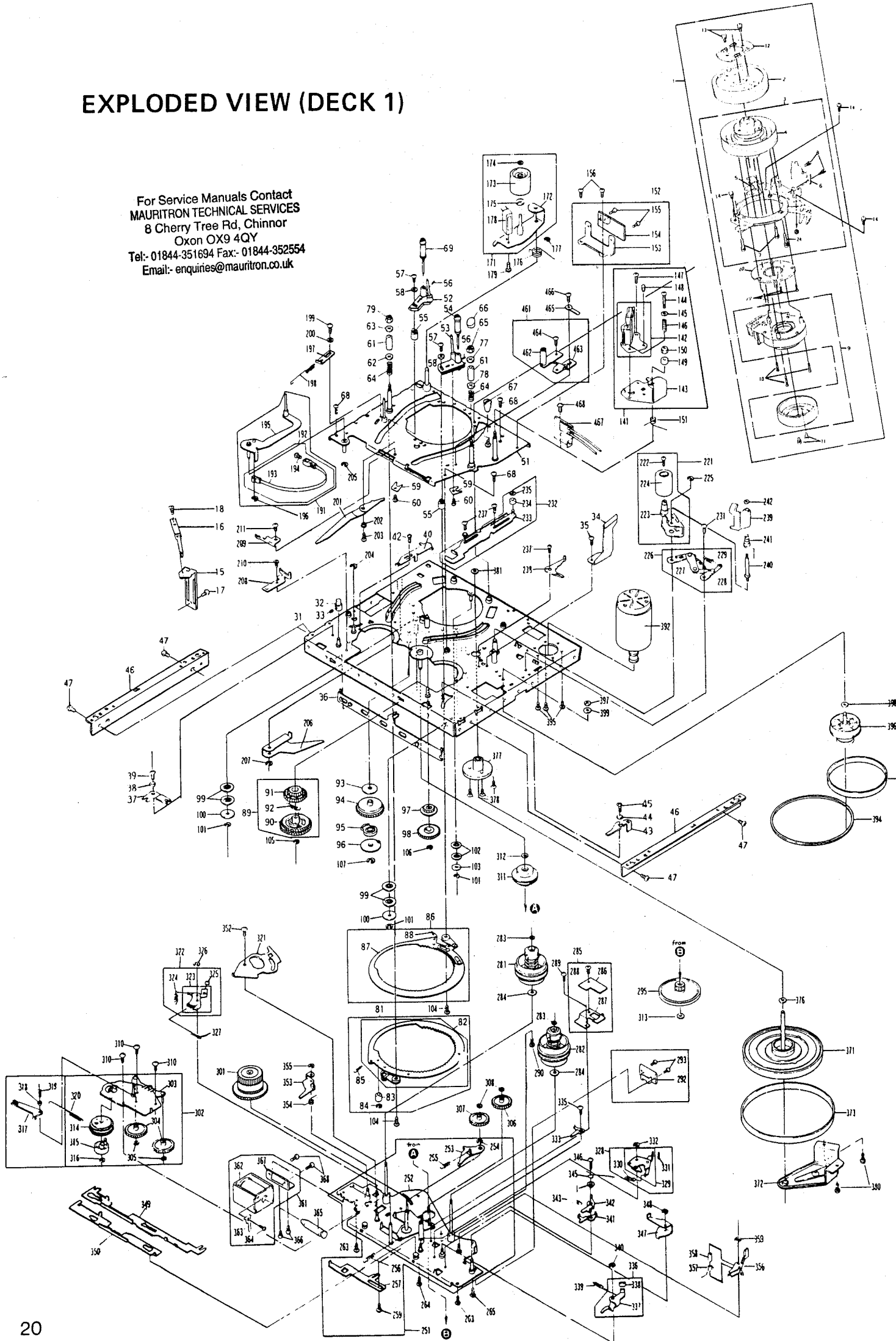
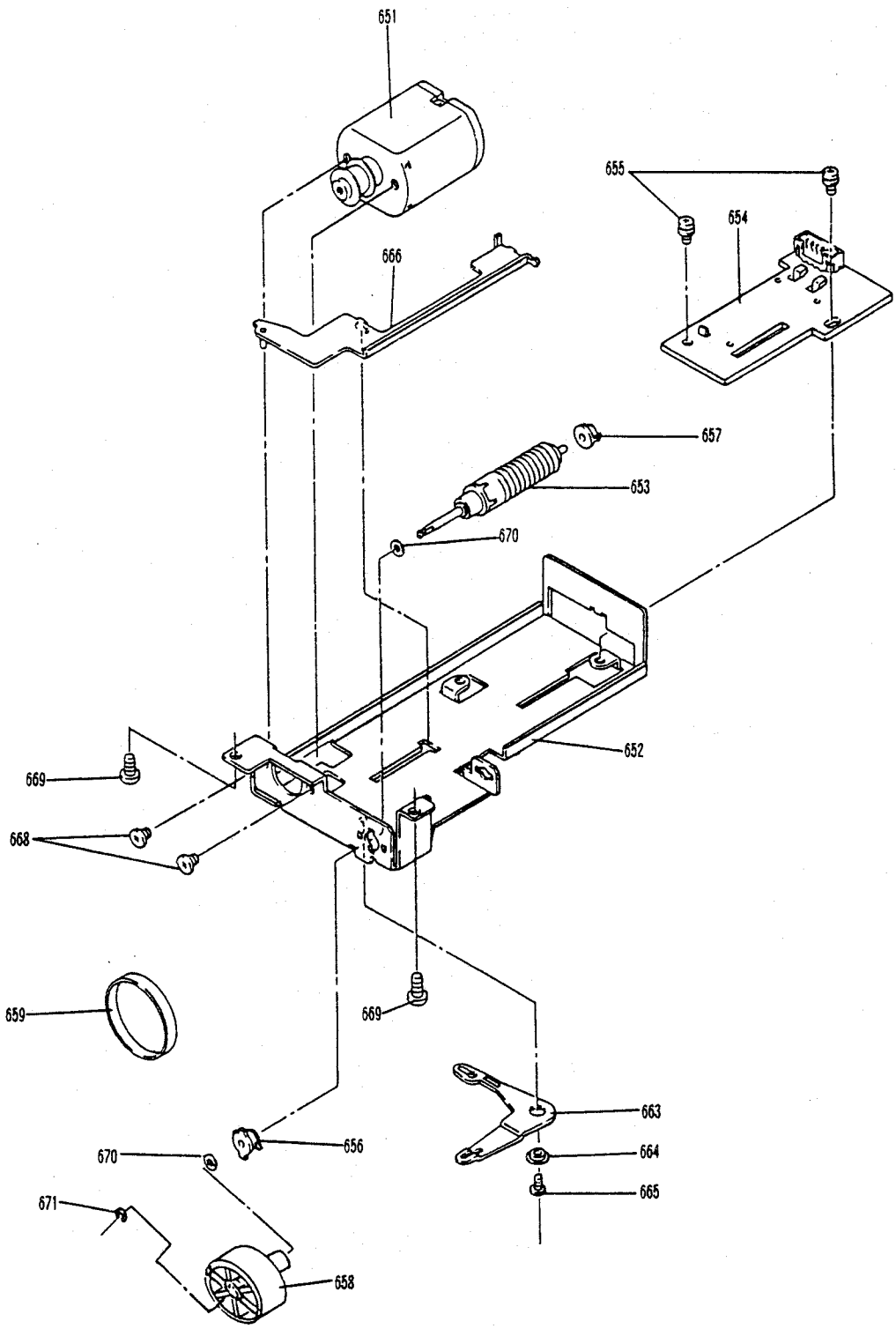


EXPLODED VIEW (DECK 2)



EXPLODED VIEW (DECK 3)

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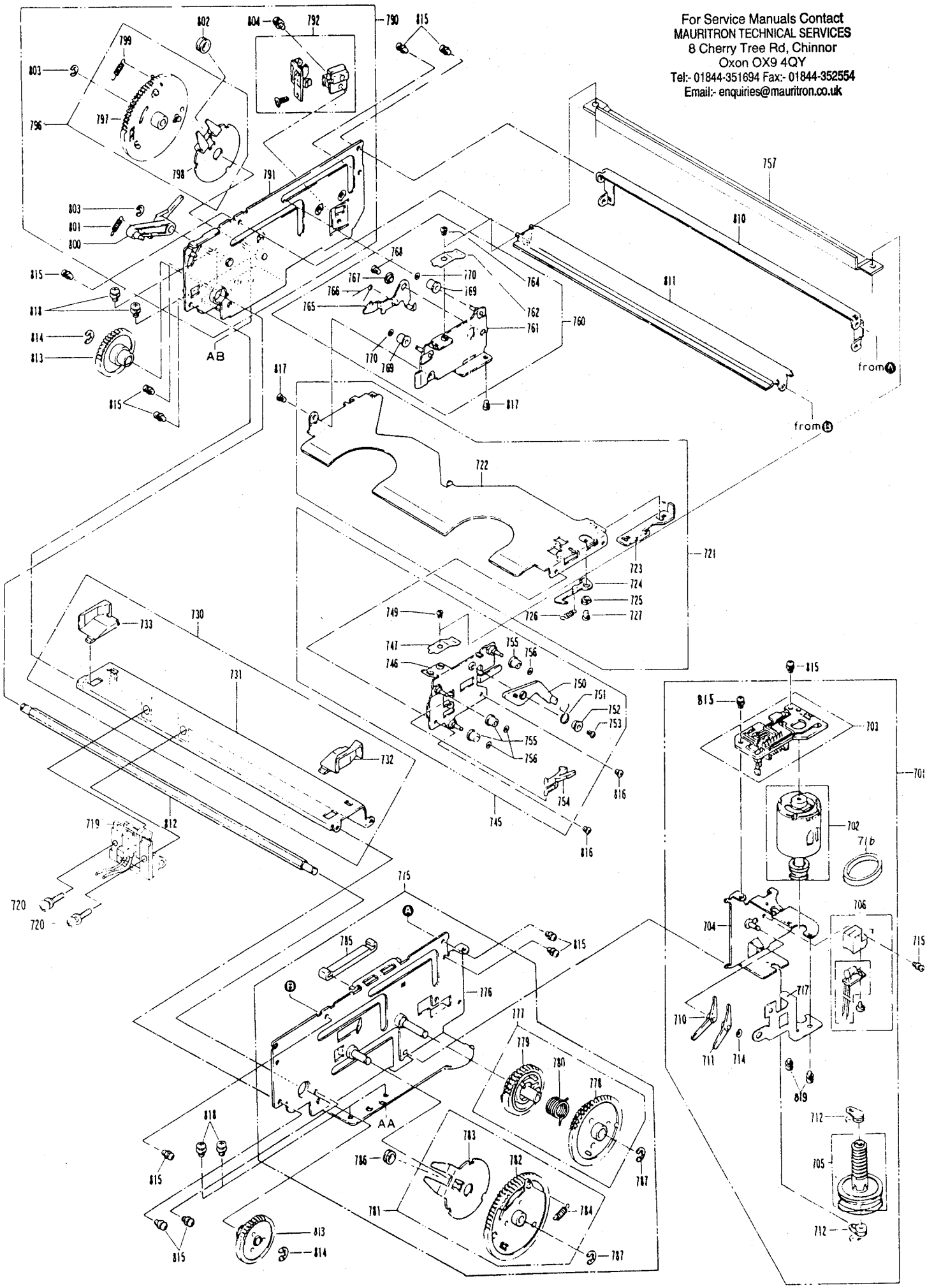

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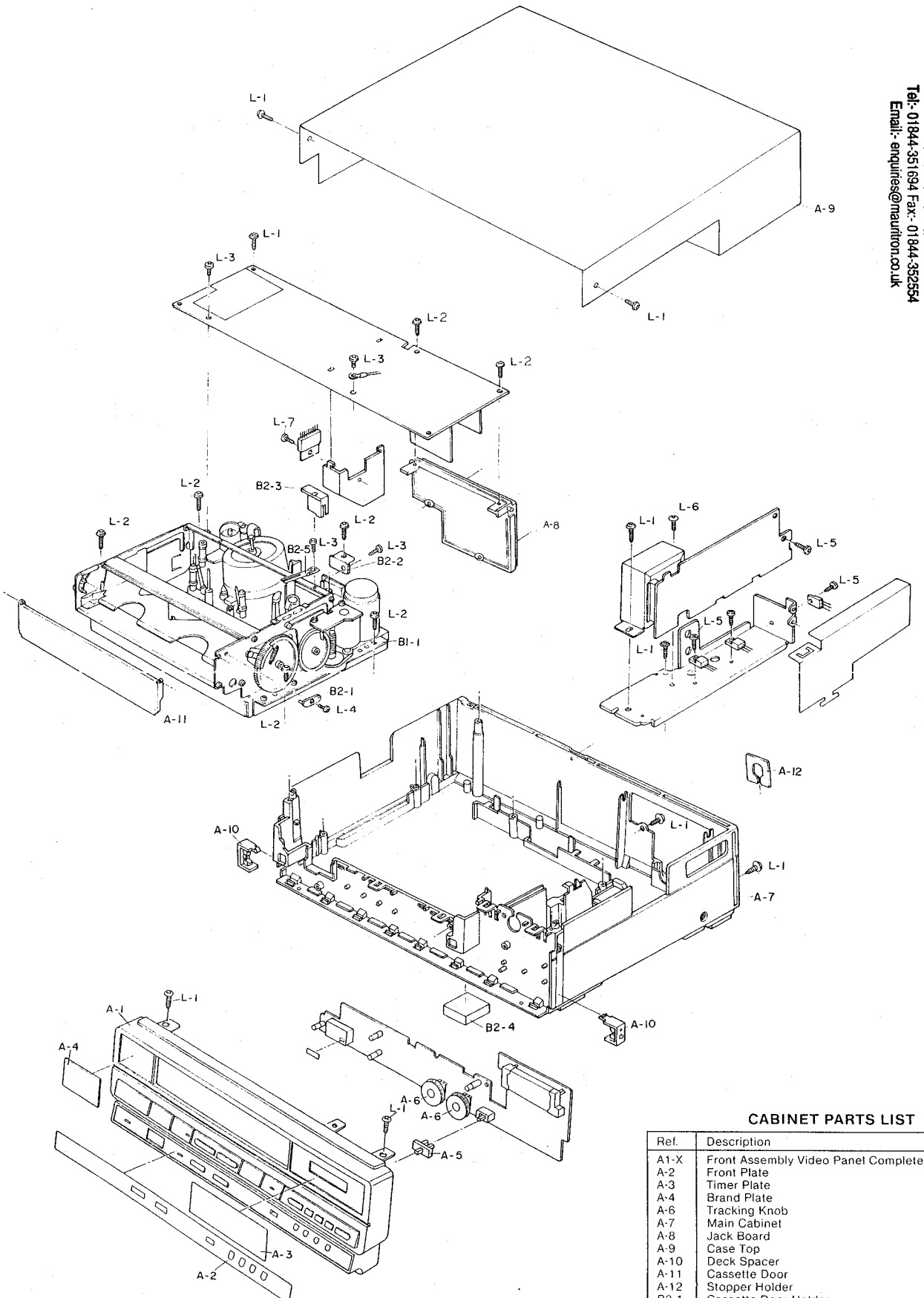
EXPLODED VIEW (CABINET) VIDEO SECTION

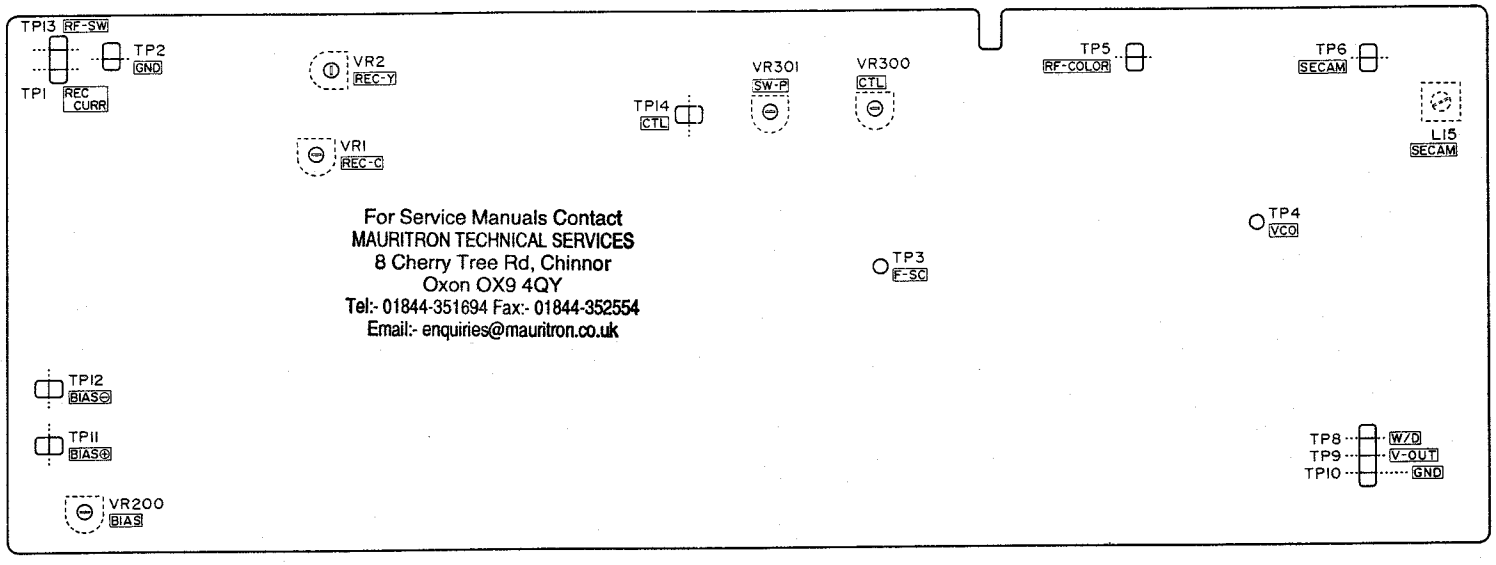


CABINET PARTS LIST

Ref.	Description	Part No.
A1-X	Front Assembly Video Panel Complete	152530
A-2	Front Plate	152531
A-3	Timer Plate	152532
A-4	Brand Plate	152533
A-6	Tracking Knob	152534
A-7	Main Cabinet	152535
A-8	Jack Board	152536
A-9	Case Top	152537
A-10	Deck Spacer	152538
A-11	Cassette Door	152539
A-12	Stopper Holder	152540
B2-1	Cassette Door Holder	152541
B2-2	Deck Holder	152542
B2-3	Head Shield	152543
B2-5	Ground Plate	152544

TEST POINTS AND ALIGNMENT POINTS — VIDEO SECTION

Main PCB



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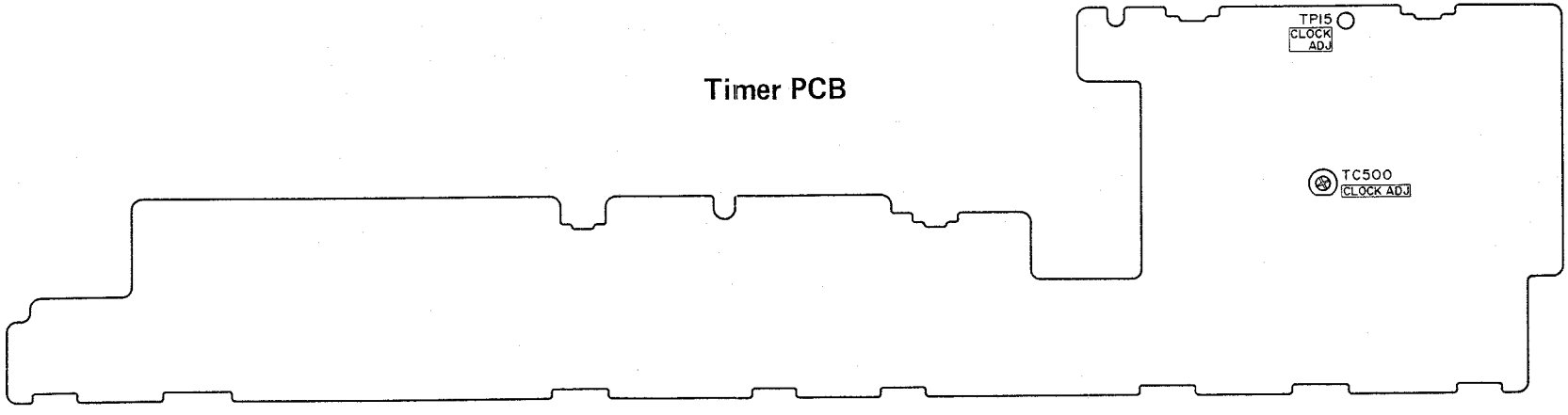
Timer PCB



ALIGNMENT INSTRUCTIONS

PREPARATION

Electrical adjustments are required after replacing circuit components and certain mechanical parts. It is important to perform these adjustments only after all repairs and replacements have been completed. Also, do not attempt these adjustments unless the proper equipment is available.

REQUIRED TEST EQUIPMENT

1. Oscilloscope : Dual-trace with 10 : 1 probe.
2. Frequency Counter
3. Color Monitor
4. Pattern Generator (Color bar with 100% white)
5. AC Voltmeter (RMS)
6. Alignment Tape F6-A (Color bar with 100% white)

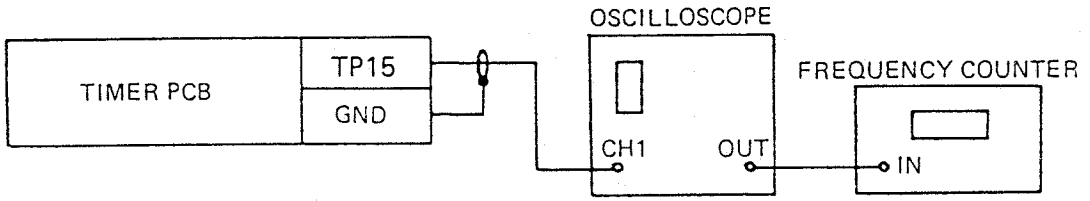


Fig. 1

No.	Item	Test point	Adjustment point	Method	Connection Figure
1	Timer clock E-E Mode	TP15 Ground	TC500	1. Connect the oscilloscope across TP15 and Ground. 2. Connect the frequency counter to oscilloscope out. 3. Make adjustment by TC500 so that the indication of frequency counter becomes 524.288 kHz ± 1Hz.	Fig. 1

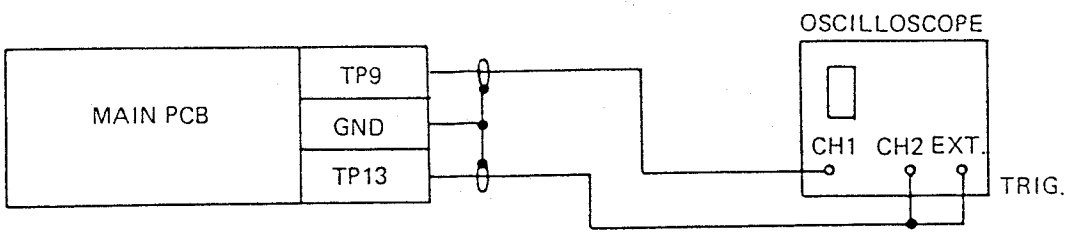
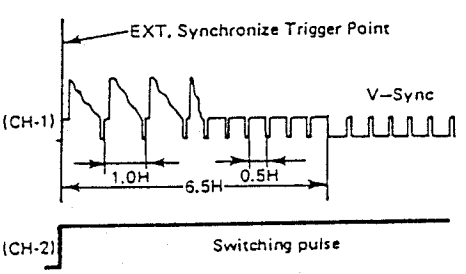


Fig. 2

No.	Item	Test point	Adjustment point	Method	Connection Figure
2	Switching point Adjustment Test Tape (F6-A)	TP9 TP13	VR301	1. Connect CH1 to TP9 of VIDEO-OUT and CH2 to TP13, and set EXT. Trigger mode control to (+) Trigger. 2. Playback the tape and adjust by VR301 so that the Vsync front edge of CH1 video output waveform is delayed 6.5H (412.7 μs) from the rising of CH2 Head Switching Pulse waveform. 	Fig. 2

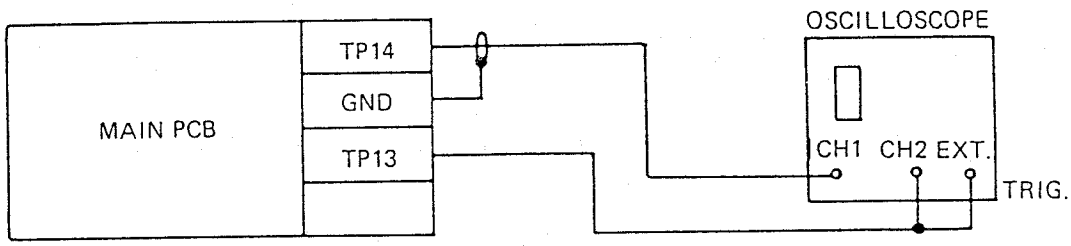
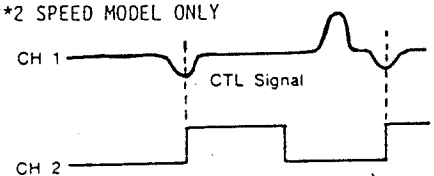


Fig. 3

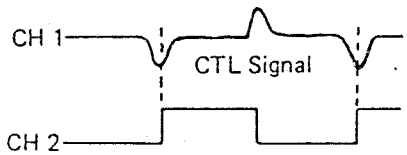
No.	Item	Test point	Adjustment point	Method	Connection Figure
3	CTL Preset Adjustment (P.B. mode) Test tape F6-A	TP14 TP13	VR300	1. Connect CH1 of oscilloscope across TP14 and Ground. 2. Connect CH2 of oscilloscope across TP13 and Ground. 3. Set the EXT. Trigger mode control of the oscilloscope to (+) trigger. 4. Playback the tape by setting tracking volume at center click position. 5. Adjust VR300 so that the falling of CTL waveform of CH1 becomes same position with rising of switching pulse of CH2.	Fig. 3

** 5. Adjust VR302 so that the falling of CTL waveform of CH1 becomes same position with rising of switching pulse of CH2.

**2 SPEED MODEL ONLY



(2Speed Model Only)



(1Speed Model Only)

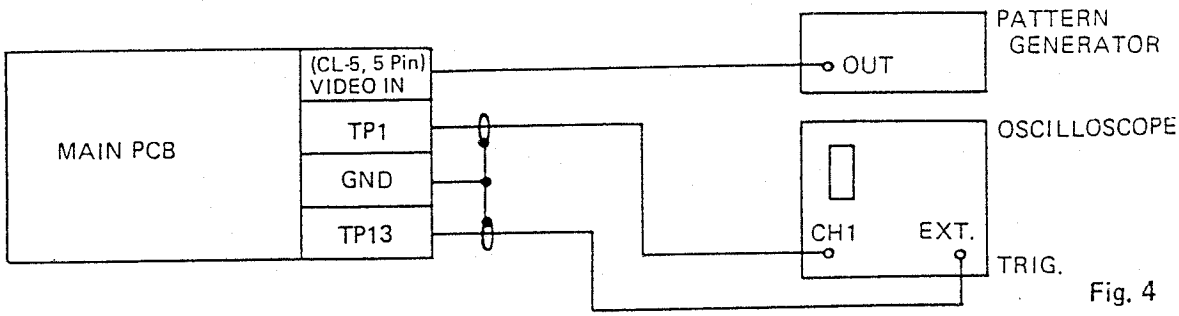
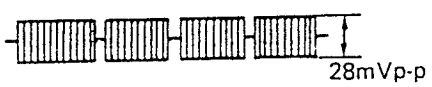


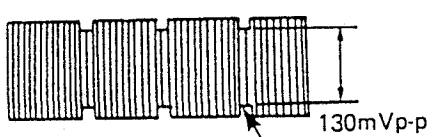
Fig. 4

No.	Item	Test point	Adjustment point	Method	Connection Figure
4	Rec. Current Adjustment SP Mode Blank tape	TP1 (GND) TP13	VR2 VR1	1. Connect CH1 of oscilloscope across TP1 and Ground. 2. Connect EXT. Trig. of osilloscope across TP13 and Ground. 3. Turn VR2 to fully counter clockwise. 4. Input color bar with 100% white signal to VIDEO INPUT. 5. Adjust VR1 so that chrome level becomes 35m Vp-p.	Fig. 4

5. Adjust VR1 so that chrome level becomes 28m Vp-p.



6. Adjust VR2 so that V-Sync level becomes 130mVp-p ± 10mV.



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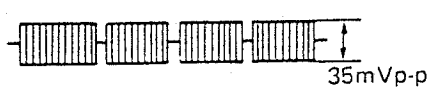
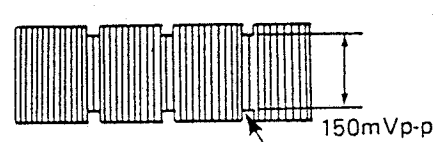


6. Adjust VR2 so that V-Sync level becomes 150mVp-p ± 10mV.



(1Speed Model Only)

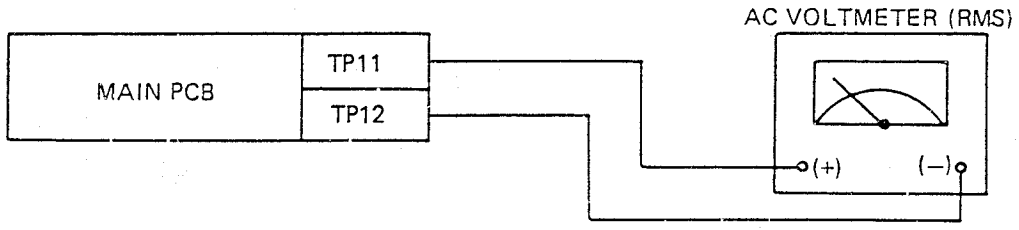


Fig. 5

No.	Item	Test point	Adjustment point	Method	Connection Figure
5	REC Bias Current	TP11 TP12	VR200	1. Set the REC status by the blank tape. (Do not set the PAUSE. In PAUSE mode, the bias oscillation is stopped.) 2. Connect the AC voltmeter to TP11 and TP12 . 3. Adjust by VR200 so that the voltage becomes 21mV.	Fig. 5

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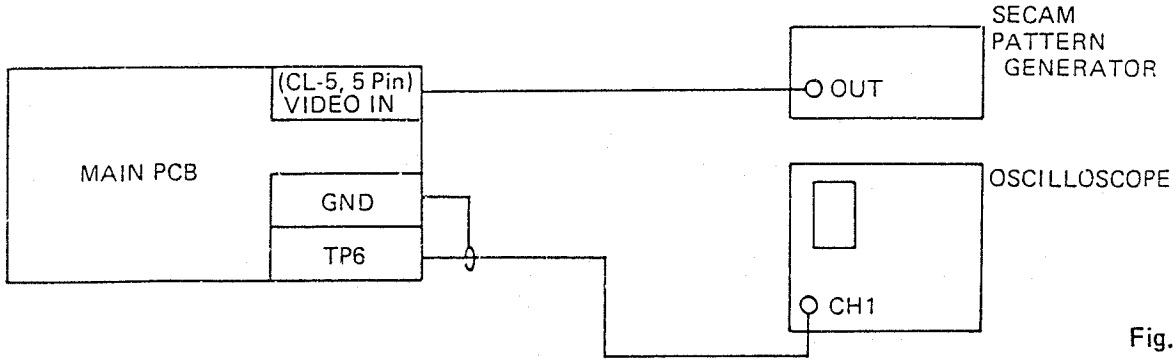


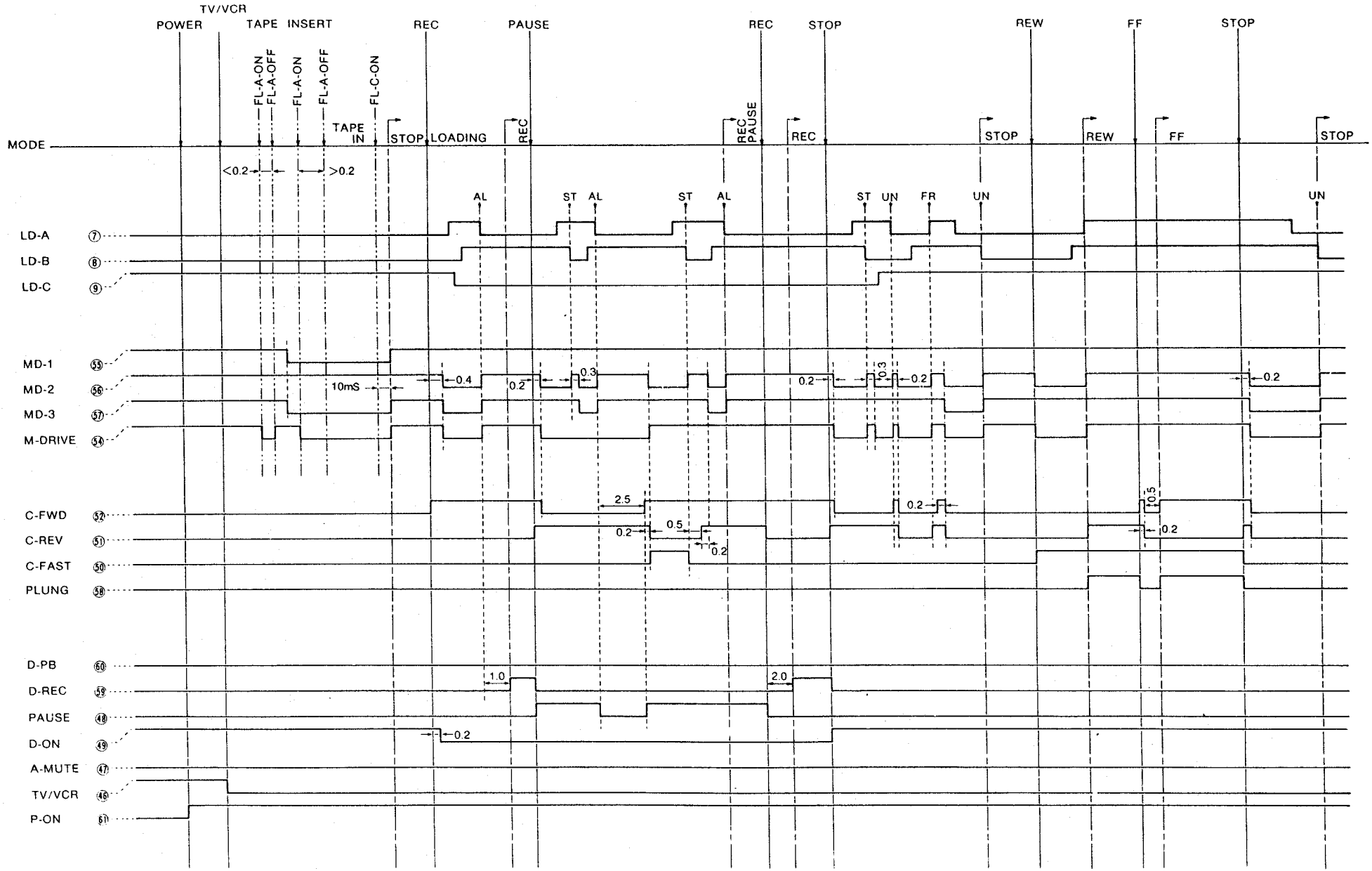
Fig. 6

No.	Item	Test point	Adjustment point	Method	Connection Figure
6 *	SECAM 1/2 fH Tune Adjustment (Rec. Mode) Blank tape	TP6 GND	L15	1. Connect the equipment as shown in Fig. 6. 2. Input SECAM color bar to VIDEO IN. 3. Adjust L15 to make maximum output level.	Fig. 6

* Note: Require this adjustment for ME-SECAM model only.

SYSTEM CONTROL TIMING CHARTS

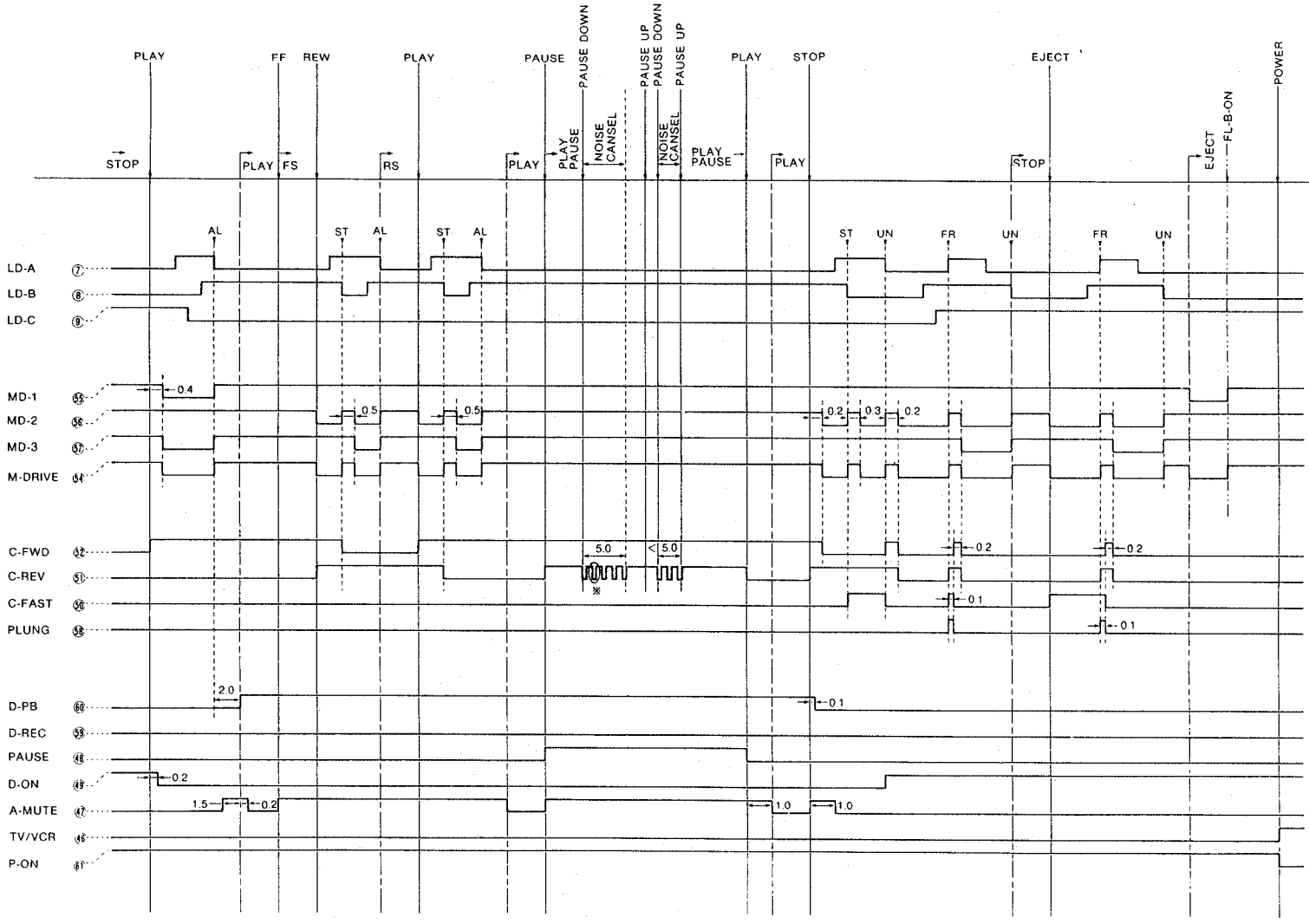
1 POWER→TV/VCR→TAPE INSERT→REC→PAUSE→REC→STOP→REW→FF→STOP



NOTICE

All time values are in second.

2 STOP→PLAY→FF(FS)→REW(RS)→PLAY→PAUSE→NOISE CANCEL→PAUSE→PLAY→STOP→EJECT→POWER



※ 8ms / 80ms

Under "NOISE CANSEL MODE"
If "NOISE CANSEL MODE" is more than "5"sec, it will transfer to "PAUSE MODE" automaticaly.

29

Drum & Capstan Servo (Record Mode)

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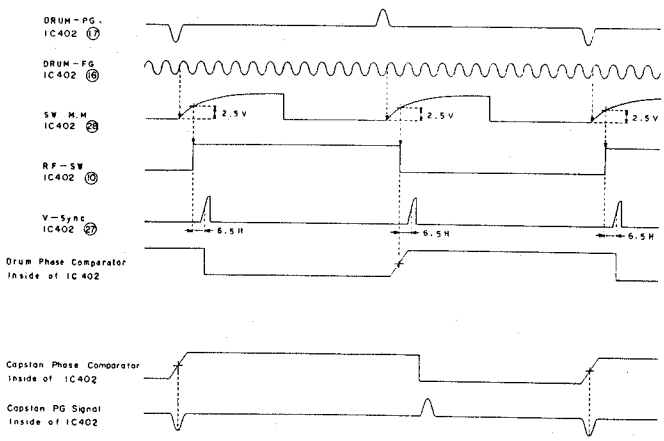
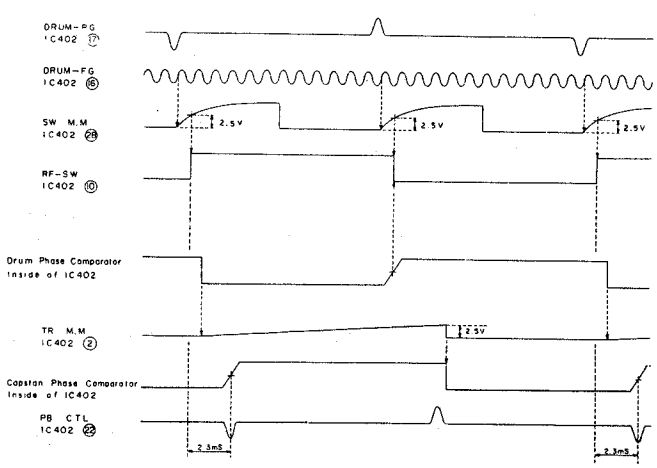
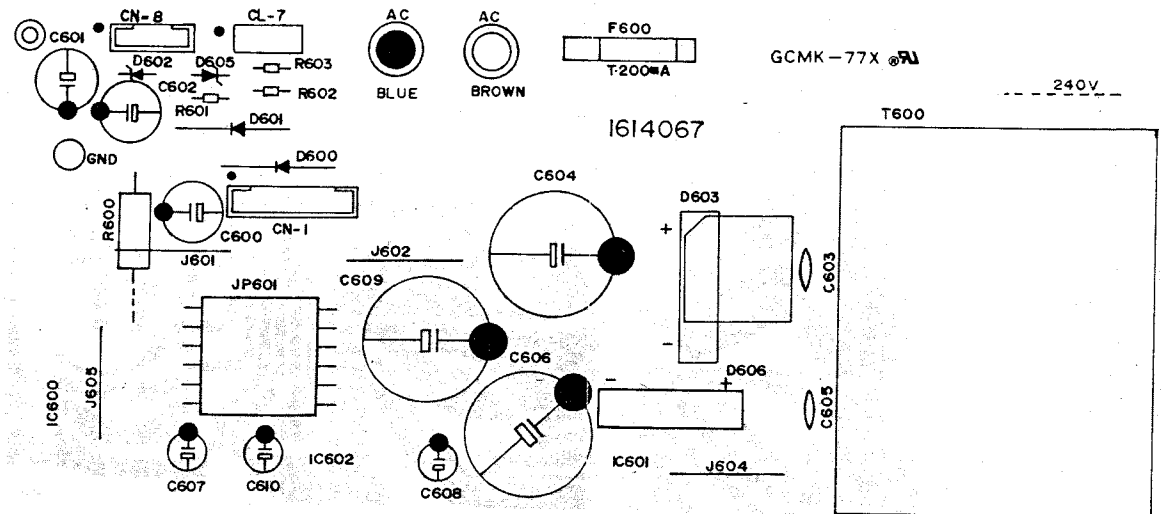
Drum & Capstan Servo (Playback Mode)

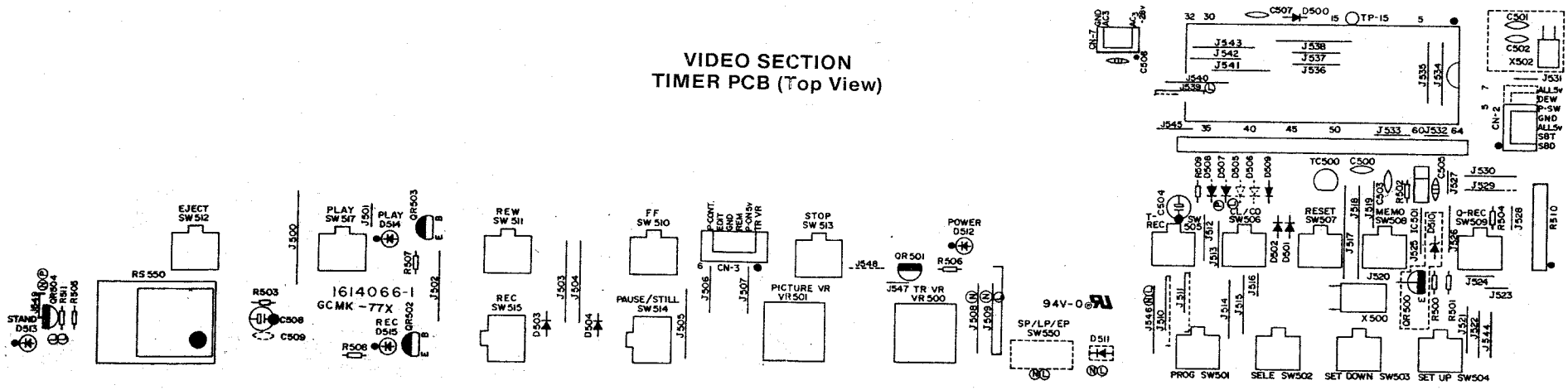




VIDEO SECTION
POWER SUPPLY PCB (Top View)



VIDEO SECTION
TIMER PCB (Top View)



DECK MECHANISM PARTS LIST

Ref. No.	Description	Part No.
1	Cylinder Assy.	152545
2	Drum Upper with Video Head	156001
3	Mount Assy. Cylinder	151240
4	Drum Lower Assy	150710
5	Mount Cylinder	151241
6	PCB Assy. Video Out	150711
7	Screw Sems M3 x 10	
8	Screw Small M2.6 x 6	
9	Motor TM-81A	151787
10	Screw Camera M2 x 4.5	
11	Screw Sems M2.6 x 6	
12	PCB for Upper Drum	151242
13	Screw Sems M3 x 8	
14	Screw Sems M3 x 10	
15	Bracket Drum Ground	151243
16	Ground Drum	150713
17	Screw Tams M3 x 10	
18	Screw Cup M2.6 x 3	
19	Screw Sems M2 x 5	
20	Rivet, Drum Motor Bracket	151475
21	Supporter PCB, Motor	152077
24	Screw Sems M3 x 12	
31	Rivet, Chassis	151247
34	Angle Open Assy.	151248
35	Screw, C Tight, M2.6 x 5	
36	Rivet, Back Tension Change Plate	150715
37	Arm (B), Back Tension Change	150716
38,41,44, 202,230, 236,258, 334,351, 725	Collar	150717
39	Screw, Camera S-Tight M2.6 x 3.5	
40	Actuator (B), Back Tension	150718
42, 45	Screw, C-Tite M2.6 x 5	
43	Return Arm, Right Bracket	150719
46	Bracket, Mech	150720
47	Screw, C-Tight M3 x 5	
51	Rivet, Loading Base	150721
52	Block (L), Loading	150722
53	Block (R), Loading	150723
54	Post, Loading	150725
55	Boss, Loading	150725
56	Screw, Set with Hexagon Hole 2 x 3	
57	Screw, Camera M2.6 x 4.5	
58	Washer, Flat, Ø2.6 x Ø7 x t0.8	151249
59	Holder, Loading	150726
60	Screw, Sems M2 x 4	
61	Guide, Tape	150727
62	Flange, Tape Guide	150728
63	Flange (B), Tape Guide	150729
64	Spring, Tape Guide	151250
65	Nut, M3	151251
66	Cap, Guide	151252
67	Nut, Tracking Adjuster	150730
68	Screw, M3 x 6	
69	Roller Post, SIS	151476
77	Flange (C), Tape Guide	151477
78	Flange (D), Tape Guide	151478
79	Nut, Nylon, M3	150754
81	Assy. Loading Plate (L)	151257
82	Rivet Loading Plate (L)	150732
83	Roller Back Tension Return	150733
84	E-Ring Ø1.5	150734
85	Spring Loading Plate	150735
86	Assy. Loading Plate (R)	151258
87	Rivet Loading Plate (R)	150736
88	Spring Loading Plate	151259
89	Gear Assy. L Drive	151260
90	Gear (A) L Drive	150737
91	Gear (B) Assy. L Drive	150738
92	Gear Spring L Drive	150739
93	Washer Flat Ø4 x Ø16 x t0.6	150740
94	Gear Control	150741
95	Plate Gang	150742
96	Gear Gang	150743
97	Gear Joint B	150744
98	Gear Joint A	150745
99	Gear Guide	150746
100	Washer Flat Ø2.5 x Ø14 x t1	150747
101	E-Ring Ø2.0	151261
102	Roller Guide	150748
103	Washer Flat Ø2.5 x 10 x t1	
104	Screw Small M2.6 x 4	
105	E-Ring Ø3.2	151262
106	E-Ring Ø2.3	151263
107	E-Ring Ø2.5	151264
141	Assy. Head Base	151266
142	Head Audion CFL H2918	150751

Ref. No.	Description	Part No.
143	Rivet Head Base	150752
144	Screw Small M2.6 x 12	
146	Spring Azimuth	151268
147	Screw Small M2.6 x 7	
148	Screw Set with Hexagon Socket 3 x 5	
149	Collar Adjust	150753
150	Nut Nylon M3	150754
151	Spring Head	150755
152	Bracket Assy. MD PCB	151479
153	Bracket MD PCB	151480
154	PCB Assy. MD	151271
155	Screw Small M2 x 5	
156	Screw Sems M2.6 x 5	
171	Assy. Impedance Roller Plate	151272
172	Rivet Impedance	150756
173	Roller Impedance	150757
174	Washer Polysider Ø1.6 x Ø3.8 x t0.3	151273
175	Washer Polysider Ø2.1 x Ø5 x t0.3	151274
176	FE Plate Spring	150758
177	E-Ring Ø3.0	151275
178	Full Erase Head H-4528-0101	150759
179	Screw Small M2 x 3	
191	Arm Assy. Tension	151276
192	Assy. Brake	151277
193	Felt Assy. Back Tension	150760
194	Screw P-Tite M2 x 8	
195	Arm Assy. Tension Arm	150761
196	E-Ring Ø1.5	150734
197	Plate Back Tension Adjusting	150762
198	Spring Tension Arm	150763
199	Screw Sems M2.6 x 5	
201	Arm Back Tension Return	150764
203	Screw Small M2.6 x 4.5	
204,205, 235	E-Ring Ø2.0	151261
206	Return Lever Back Tension	150765
207,348	E-Ring Ø2.5	151264
208	Guide Tension	150766
209	Support (B) Back Tension	150767
210	Screw C-Tite M2.6 x 5	
211	Screw C-Tite M3 x 5	
221	Assy. Pinch Roller	151279
222	Screw M2.6 x 4	
223	Ruvet Pinch Roller Arm	150769
224	Roller Pinch A	150768
225	E-Ring Ø2.3	151263
226	Assy. Toggle Arm	151280
227	Rivet Toggle Arm	150770
228	Spring (B) Pinch Roller	150771
229	Spring (A) Pinch Roller	150772
231,237	Screw C-Tite M2.6 x 5	
232	Assy. Pressure Plate	151281
233	Rivet Pressure Plate	150773
234	Roller Pressure	150774
235	E-Ring Ø2.0	151261
238	Actuator Pressure Arm	151481
239	Support Tape	151482
240	Shaft Tape Support	151483
241	Spring Tape Support	151484
242	Nut Self	152078
251	Assy. Sub Chassis	151282
252	Rivet Sub Chassis	150775
253	Arm Change Plate Action	150776
254	E-Ring Ø3.0	151275
255	Spring Change Plate	150777
256	Spring Change Plate Action Arm	150778
257	Rivet Actuator Switch	150779
259,263	Screw Sems M2.6 x 5	
264	Screw Sems M2 x 6	
265	Screw Camera Flat Head M2.6 x 5	
281	Reel Assy. Supply	150781
282	Reel Assy. Take-Up (B)	150872
283	Washer Polysider Ø2 x Ø5 x t0.5	
284	Washer Ø3.1 x 6 x t0.6	
285	Bracket Assy. Reel Sensor	151283
286	PCB Assy. Reel Sensor	150782
287	Bracket (B) Reel Sensor	151283
288	Screw Camera M2.6 x 2.5	
289,293	Screw Sems M2.6 x 5	
290	Screw Small M2.6 x 7	
292	PCB Assy. Reel Sensor Connector	151485
293	Screw Sems M2.6 x 5	
295	Pulley Wind	151486
301	Assy. Clutch	150873
302	Assy. Gear Holder	151284
303	Rivet Gear Holder	150783
304	Gear R Drive	150784
305	E Ring Ø1.5	150734
306	Gear P	150785
307	Gear FF	150786

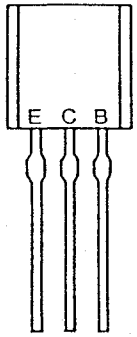
DECK MECHANISM PARTS LIST

Ref. No.	Description	Part No.
308	Washer Ø1.6 x Ø3.8 x t0.3	
309	Wave Washer	
310	Screw Small M2 x 5	
311	Clutch Assy. RF (B)	150787
312	Washer Ø3.6 x Ø6 x 70.1	
313	Washer Polysider Ø2.6 x Ø6 x t0.5	
314	Gear (B) Assy. Return	150788
315	Drum Assy. Return	150789
316	E-Ring Ø1.5	150734
317	Arm Return	150790
318	Arm Collar Return	150791
319	Screw Camera M2 x 3	
320	Spring Return	150792
321	Plate Switching	150793
322	Brake Assy. Supply Reel	150794
323	Main Brake, Supply Reel	150794
324	Spring Brake Arm	150795
325,331	Shoe B Brake	150796
326,332,	E-Ring Ø2.3	151263
340,355,		
359		
327	Spring Main Brake	150797
328	Main Brake Assy. Take-Up Reel	151285
329	Main Brake, Take-Up Reel	150798
330	Spring, Brake Arm	151286
331	Shoe B Brake	150796
332,355,	E-Ring Ø2.3	151263
359		
333	Arm, Take-Up Brake Actuator	150799
335,366	Screw, Sems M2.6 x 5	
336	Arm, Assy. Left Brake	151287
337	Arm Left Brake (B)	150800
338	Shoe, Brake	150801
339	Spring, LB Arm	150802
341	Arm, Right Brake Actuator	150803
342	Arm, Left Brake Actuator	150804
343	Spring, Neutral	150805
344	Collar, Left Brake Actuator Arm	150806
345	Spring, Left Brake Actuator Arm	150807
346	W Tams M2.6 x 11	
347	Crank, Bell	150808
348	E-Ring Ø2.5	151264
349	Plate Main	150809
350	Plate, Pull	150810
352,466	Screw Sems M2.6 x 5	
353	Brake Assy, S Soft	150811
354	Spring, S Soft Brake	150812
356	Arm Assy, Back Tension	150813
357	Spring, Right Brake	150814
358	Sleeve, Right Brake Arm	150815
361	Plunger Assy, Supply	151288
362	Plunger Assy, Main	150816
363	Board, Release Spring	150817
364,375	Screw, Sems M2 x 4	
365	Plunger	150818
366,368	Screw Sems M2.6 x 5	
367	Holder Plunger	151487
371	Capstan Assy, Flywheel	150819
372	FL Plate Assy	151488
373	Belt, Main	151489
376	Washer, Nylon Ø3.6 x Ø10 x t0.5	
377	Capstan Metal	151490
378	Screw, Flat M2.6 x 6	
380	Screw C-Tight M3 x 5	
381	Washer Nylon Ø3.43 x Ø5 x t0.5	
392	Motor Assy, Capstan	151491
393	Belt Drive	151492
394	Belt Joint	151493
395	Screw, Sems M3 x 4	
396	Pulley Joint	151913
397	Washer Polysider Ø1.6 x Ø3.8 x t0.3	
398	Washer Luminaire Ø2.1 x Ø5 x t0.5	
462	PCB Assy, Lamp	150824
467	Sensor, Dew EYH-S11P	150825
468	Screw, Sems M3 x 4	
650	Tape Loading Motor Assy.	151494
651	Motor with Pulley	151495
652	Motor Bracket (B) Tape Loading	151496
653	TL Worm Gear	151497
654	Mode Switch Assy.	151498
655	Screw Sems M2.6 x 5	
656	Holder (A) TL Worm Gear	151499
657	Holder (B) TL Worm Gear	151500
658	Pulley TL	151501
659	Belt TL	151502
663	Actuator Angle switch	151503
664	Collar Actuator Angle	151504
665	Screw Sems M2 x 4	
666	Actuator M Switch	151505
668	Screw Sems M3 x 4	

Ref. No.	Description	Part No.
669	Screw C-Tight	
670	Washer Ø2.2 x Ø3.8 x t0.2	
671	E-Ring Ø1.2	151634
700	Front Loading Assy.	151506
701	Bracket Assy. Loading Motor	151507
702	Motor Assy, Loading	151508
703	PCB Assy, Loading Motor	151509
704	Rivet Motor Bracket	151510
705	Gear Worm	151511
706	PCB Assy, Sensor	151512
710	Lever (A) Switch	151513
711	Lever (B) Switch	151514
712	Holder Worm Gear	151515
714	Washer Polysider Ø1.6 x Ø3.8 x t0.3	
715	Screw Sems M2 x 5	
716	Belt Front Loading	151516
717	Bracket (B) Motor	151517
719	Record Switch Assy.	151518
720	Screw Sems M2 x 4	
721	Cassette Holder Assy.	151519
722	Holder Cassette	151520
723	Plate Slide	151521
724	Lock Plate (R)	151522
725	Collar	150717
726	Spring Lock Plate	151524
727	Screw Camera M2.6 x 3	
730	Front Bracket Assy.	151525
731	Bracket Front	151526
732	Guide Tape (R)	150846
733	Guide Tape (L)	150847
745	Side Plate (R) Assy.	151527
746	Plate (R) Side	151528
747	Pressure Cassette	150837
749,764	Screw Camera M2.3 x 2	
750	Lever Open	151530
751	Spring Open Lever	151531
752	Collar Open Lever	151532
753	Screw Camera M2 x 4	
754	Lever Rock Cancel	151533
755	Roller Guide	151534
756	Washer Polysider Ø1.6 x Ø3.8 x t0.3	
757	Stay Top	151535
760	Side Plate (L) Assy.	151536
761	Plate (L) Side	151537
762	Pressure Cassette	150837
764	Screw Camera M2.3 x 2	
765	Lock Plate (L)	150840
766	Spring Lock Plate (L)	151538
767	Collar Lock Plate	151539
768	Screw Camera M2 x 2.5	
769	Roller Guide	151540
770	Washer Polysider Ø1.6 x Ø3.8 x t0.3	
775	Housing Bracket (R) Assy.	151541
776	Bracket (R) Housing	151542
777	Wormwheel Assy.	151543
778	Wormwheel	151544
779	Gear Friction	151545
780	Spring Friction	151546
781	Lift Gear (R) Assy.	151547
782	Gear (R) Lift	151548
783	Arm Lift	151549
784	Spring Lift Gear	151550
785	Guide Open Lever	151551
786	Sleeve Guide	151552
787	E-Ring Ø2.5	151264
790	Housing Bracket (L) Assy.	151553
791	Bracket (L) Housing	151554
792	PCB Assy, (L) Sensor	151555
796	Lift Gear (L) Assy.	151556
797	Gear (L) Lift	151557
798	Arm Lift	151558
799	Sprint Lift Gear	151559
800	Lever Lift	151560
801	Spring Lift Lever	151561
802	Sleeve Guide	151562
803	E-Ring Ø2.5	151264
804	Screw Sems M2.6 x 6	
810	Bracket Rear	151563
811	Plate Upper	151564
812	Shaft Synchronize	151565
813	Gear (A) Synchronize	151566
814	E-Ring Ø2.5	151264
815	Screw Sems M2.6 x 4	
816	Screw Camera M2.6 x 3	
817	Screw Camera M2.3 x 2.5	
818	Screw C-Tight M3 x 5	
819	Screw Sems Camera M2.6 x 4.5	

For Service Manuals Contact
MAURITRON TECHNICAL SERVICES
8 Cherry Tree Rd, Chinnor
Oxon OX9 4QY
Tel:- 01844-351694 Fax:- 01844-352554
Email:- enquiries@mauritron.co.uk

LEAD IDENTIFICATION 1 (IC, Transistor)



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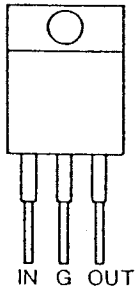
2SA608SP
2SA536SP



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AN7818F
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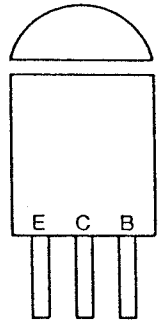

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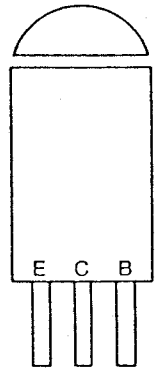

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2SD400
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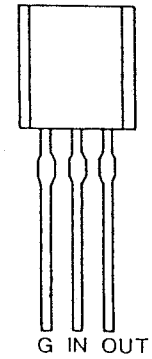

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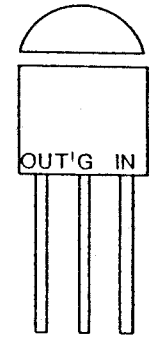
2SA1346
DTA144WS



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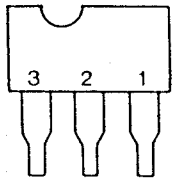

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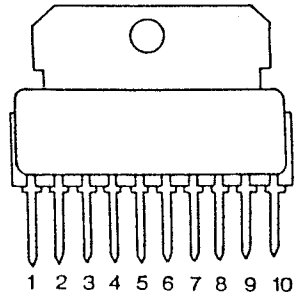

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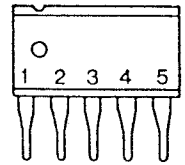

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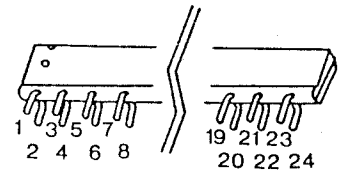
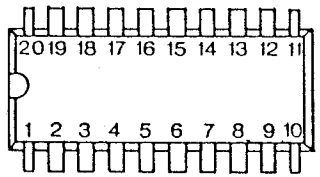


BA7751ALS

LEAD IDENTIFICATION 2 (IC, Transistor)



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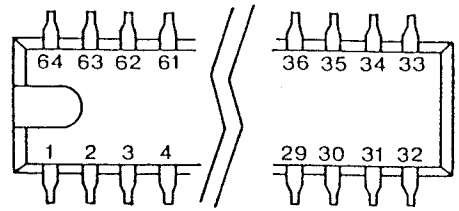

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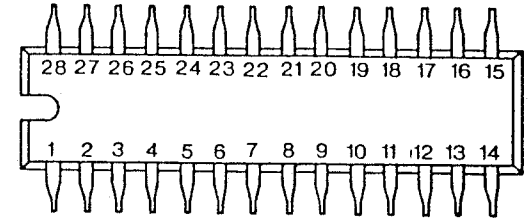
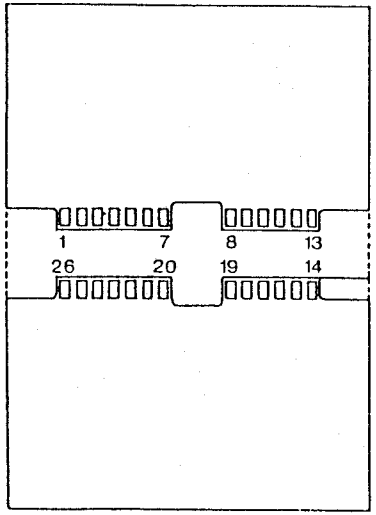
14DN329



14DN300

For Service Manuals Contact
MAURITRON TECHNICAL SERVICES
8 Cherry Tree Rd, Chinnor
Oxon OX9 4QY
Tel:- 01844-351694 Fax:- 01844-352554
Email:- enquiries@mauritron.co.uk



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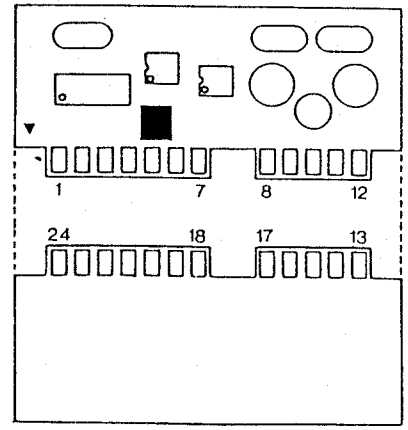

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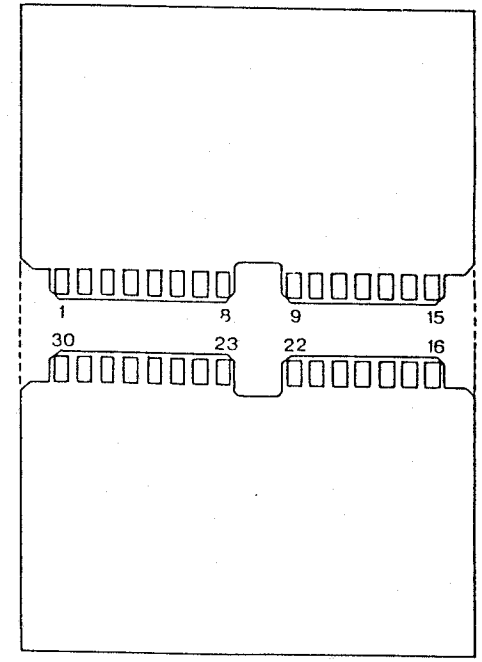


1812421
(VIDEO-C)

VIDEO ELECTRICAL PARTS LIST

PCB ASSEMBLY POWER SUPPLY		
Description	Circ. Ref.	Part No.
Electrolytic Capacitors		
33uF/63V	C600	152625
47uF/16V	C607, 608	20027
47uF/35V	C601	152081
47uF/63V	C602	152096
2200uF/16V	C609	152626
2200uF/25V	C606, 610	151310
2200uF/35V	C604	152097
Ceramic Capacitors		
0.022uF	C603, 605	⚠ 21027
Carbon Film Resistors		
100ohm 1/5W	R601, 602	152166
22kohm 1/5W	R603	152198
Oxide Film Resistors		
1.8kohm 1W	R600	152627
Circ. Ref.	Description	Part No.
Diodes		
C600, 601	D IN4003	⚠ 150933
D602	DZ UZ27BH/MTZ30A	152074
D603, 606	D KBL02L/RS403L/S4VB20	152075
D605	DZ MTZ6.2B	1422114
IC's		
IC600, 601	IC AN7812F/NJM7812FA	151707
IC602	IC AN7818F/NJM7818FA	151416
Miscellaneous		
T600	Power Transformer 1150596	⚠ 152628
F600	Fuse 200mA (T)	⚠ 151631

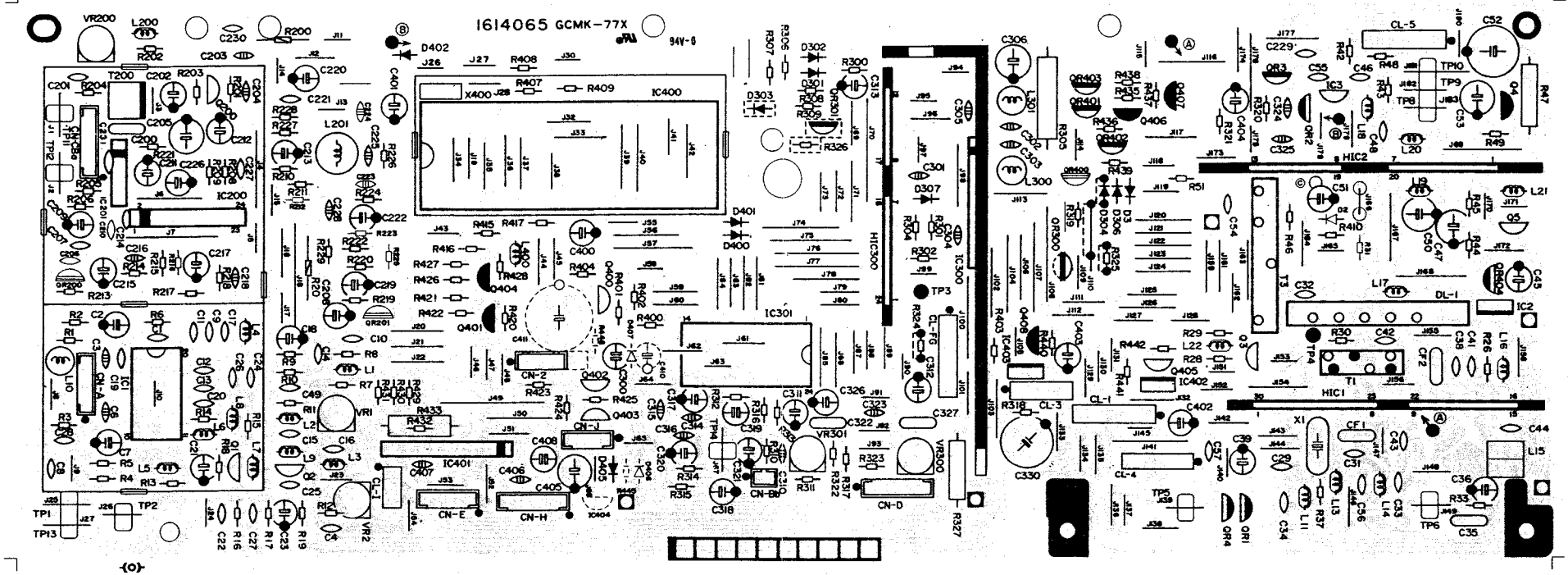
TIMER PCB ASSEMBLY		
Diodes		
D500-504, 507-509, 511	D 1SS254/US1040M/GMB01B	150624
D512, 515	D LED Red 263	152630
D513	D LED Orange 344	152631
D314	D LED Green 264	152632
IC's		
IC500	IC FEVTI 14DN329 C-MOS/ MICRO CON TIMER	152633
IC501	IC MN1280-Q RESET	151411
Transistors		
Q501, 504	TR DTC124ES/2SC3400	151422
Q502, 503	TR DTA124ES/2SA1346	151422
Switches		
SW501-515, 517	Push Switch 5622015	151618
SW550	Slide Switch 1621664	152635
Miscellaneous		
FL500	FIP Display	151807
	Holder (L)	152636
	Holder (R)	152637
X500	Crystal 4.19MHz	150954
TC500	Trimmer 20pF	150680
VR500	VR 250kohm Tracking	151814
VR501	VR501 20kohm Picture	152638
RS500	Remote Sensor	152639
Description	Circ. Ref.	Part No.
Ceramic Capacitors		
10pF	C500	150873
0.022uF	C503	21027
Electrolytic Capacitors		
47uF/6.3V	C504, 508	151327
220uF/50V	C507	152629
Semiconductor Capacitors		
0.01uF/25V	C505, 506	152084
Carbon Film Resistors		
6.8ohm	R509	152148
270ohm	R505-508	152171
10kohm	R500, 501, 503, 511	152198
47kohm	R502, 504	152203
22kohm x 8	R510	152634

MAIN PCB ASSEMBLY		
Description	Circ. Ref.	Part No.
Ceramic Capacitors		
10pF	C49	150873
15pF	C10	400106
22pF	C24, 26, 28	150511
33pF	C14	24029
39pF	C16	151303
47pF	C20	152640
56pF	C48	810311
68pF	C27	150516
82pF	C41	150517
100pF	C1	24016
120pF	C46	150482
150pF	C15, 44	151304
180pF	C56	150492
220pF	C31, 54, 201	400107
270pF	C25	150491
330pF	C33	150518
560pF	C214	24023
820pF	C207	152641
1000pF	C221, 229	151645
1500pF	C210, 227	152642
2200pF	C43	152643
0.0022uF	C4, 55, 57	152644
0.01uF	C8, 9, 11-13, 17, 22, 32, 42	810312
0.047uF	C6, 38	152645
Electrolytic Capacitors		
1uF/50V	C2, 7, 21, 213, 217, 220, 226, 312, 318, 320	20062
2.2uF/50V	C319, 400	151598
4.7uF/25V NPO	C408	151599
4.7uF/25V	C209	20065
10uF/16V	C45, 51, 300, 313, 317, 321, 401-403	20148
100uF/25V	C306	20028
22uF/16V	C208, 212, 215, 222	151308
47uF/16V	C18, 23, 39, 202, 219, 326, 404	20027
100uF/16V	C53, 205, 311, 405	20028
220uF/6.3V	C47	151309
330uF/6.3V	C50	152082
1000uF/6.3V/16V	C52	20118
1000uF/16V	C330	20118
Semiconductive Capacitors		
0.0047uF/25V	C323, 324	151582
0.01uF/25V	C203, 204, 216, 310	152084
0.022uF/25V	C225	151585
0.033uF/25V	C218, 223	151581
0.047uF/25V	C3, 314-316	151311
0.1uF/16V	C228, 301, 325	152646
0.1uF/25V	C302-305, 406, 407	150887
Polyester Film Capacitors		
0.033uF/50V	C322	151600
0.047uF/100V	C200	152647
0.015uF/50V	C327	152648
Coils		
L1	Micro Coil 39uH	152051
L2, 7	Micro Coil 220uH	150382
L3, 4, 22, 200 400	Micro Coil 100uH	150391
L5	Micro Coil 33uH	152649
L6	Micro Coil 47uH	150570
L8, 20	Micro Coil 18uH	162650
L9	Micro Coil 100uH N557	152651
L10	Micro Coil 1.8uH	162652
L11	Micro Coil 680uH	152052
L13, 14	Micro Coil 330uH	151424
L16, 17	Micro Coil 15uH	150406
L18	Micro Coil 39uH 2390	152051
L19	Micro Coil 220uH 2221	150382
L21	Micro Coil 22uH	150945
L201	Micro Coil 12mH	150647
L300, 301	Micro Coil 200uH	152054
Oxide Film Resistors		
1.5ohm 1W	R327	150903
3.3ohm 1W	R433	151608
330ohm 1W	R47	151593
3.3kohm 2W	R305	152658
Fusible Resistors		
6.8ohm ¼W	R20	152659
22ohm ¼W	R200	151594

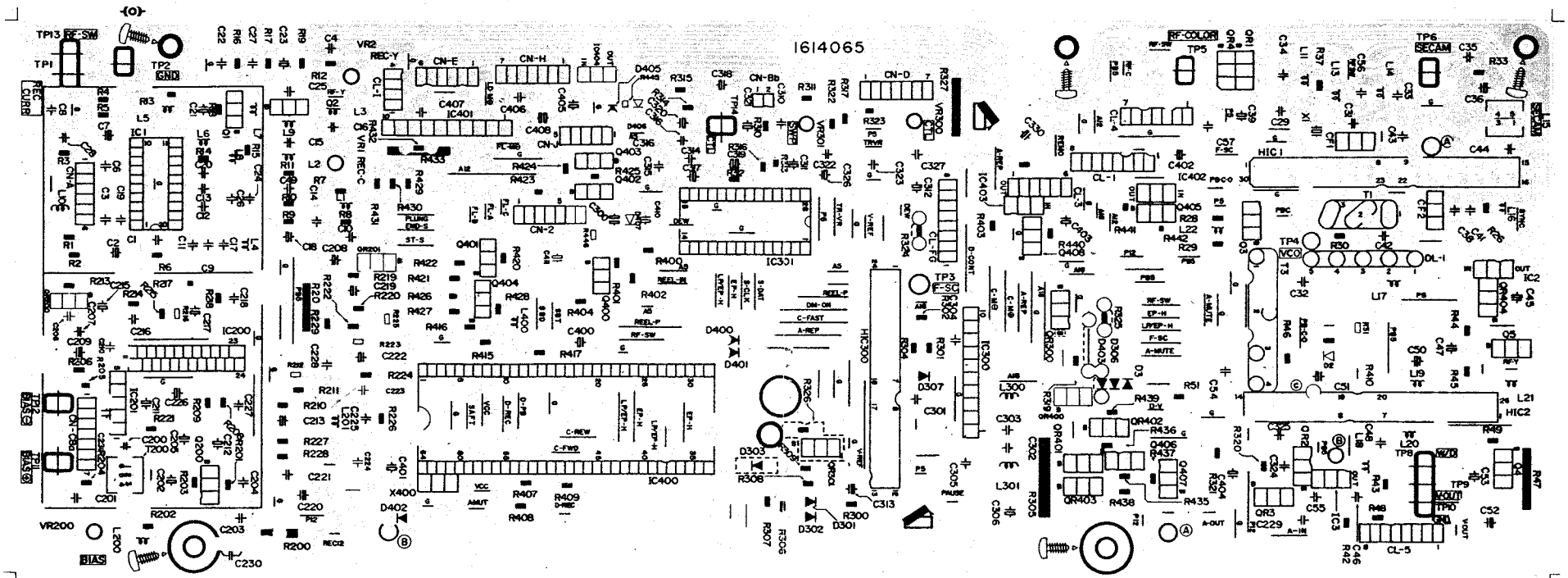
	Remote Control Handset	152664

Carbon Film Resistors		
4.7ohm	R1, 203	152146
47ohm	R202	152160
82ohm	R48	152164
100ohm	R205, 316	152166
150ohm	R317, 403	152168
180ohm	R43	152169
220ohm	R49, 213	152170
270ohm	R16, 30, 226	152171
330ohm	R7	152172
470ohm	R4	152174
560ohm	R2	152175
820ohm	R8, 14, 224	152178
1kohm	R3, 9, 12, 17, 18, 44, 46, 315, 318	152179
1.2kohm	R26, 42, 402, 441	152180
1.5kohm	R5, 13, 37, 300	152181
1.8kohm	R15, 29, 438, 438, 439	152182
2.2kohm	R19, 227, 310	152183
2.7kohm	R306, 307, 407-409	152184
3.3kohm	R45, 314	152185
3.9kohm	R10	152187
4.7kohm	R304, 311, 319, 400	152188
5.6kohm	R28, 204, 209, 216, 424	152189
6.8kohm	R201, 301, 410, 429-431	152190
8.2kohm	R11, 218	152192
10kohm	R6, 210-212, 312, 313, 320, 321, 323, 415, 416, 421, 422, 425-427	152194
12kohm	R215	152195
18kohm	R222	152197
22kohm	R217, 229, 324-326, 423	152198
27kohm	R221	152199
33kohm	R322	152200
39kohm	R208, 308, 309	152201
47kohm	R404, 417, 432	152203
56kohm	R31	152204
68kohm	R206, 220	152205
82kohm	R401, 420, 428	152207
91kohm	R302	152208
100kohm	R228, 435, 437, 440, 442	152209
330kohm	R214	152215
1Mohm	R219	152223
Circ. Ref.	Description	Part No.
Diodes		
D2, 3, 301, 302, 306, 307, 400-402	D 1SS254/US1040M/ GMB01B	150624
D405	DMP06B	152045
Filters		
T1	BPF 4.43MHz	150660
T3	I.PF 3MHz	151748
T200	Audio Osc. Coil 113M686	152056
DL-1	Comb Filter 2H	151746
CF-1	Ceramic Filter 5.06MHz	150563
IC's		
IC1	IC AN3331k Linear Head Amp	152034
IC2, 402, 404	IC AN78N05 V.Reg	152653
IC3	IC 78L05 V.Reg	152654
IC200	IC BA7751ALS Audio	151711
IC201	IC BA7755 Audio Rec/Play Switch	152046
IC300	IC BA6219B Capstan Motor Drive	150608
IC301	IC FEVSE 14DN265 Micro Processor	152655
IC400	IC FEVSY 14DN244 System Control	152656
IC401	IC BA6238A Loading Motor TA7288P Drive	151412
HIC1	HIC 1812421 Chrominance	152657
HIC2	HIC 1812119 Luminance	152029
HIC300	HIC 1812120 Servo	152031
Variable Resistors		
VR1, 2	1kohm Rec C/Y Adj.	152660
VR200	100kohm Audio Bias Adj.	152661
VR300	200kohm CTL Adj.	152662
VR301	200kohm Metal Head Switch	152663
Transistors		
Q1	TR 2SC2839EF/2SC2058PQ	152100
Q2, 2, 5, 400, 402	TR 2SC536PEF/2SC1740QR	50016
Q4, 401, 404	TR 2SA608SPEF/2SA933	151005
Q200, 403	TR 2SD400F/2SC2060Q	500021
Q405	TR 2SD1207ST/2SD1384QR	152049
Q406-408	TR 2SB892ST/2SB1010QR	150339
QR2, 404	DTR 2SA1346/DTA124ES	151422
QR3, 300, 401-403	DTR 2SC3400/DTC124ES	151422
Miscellaneous		
X1	Crystal 4.43MHz	150660
X400	Ceramic Resonator 3.5MHz	151125

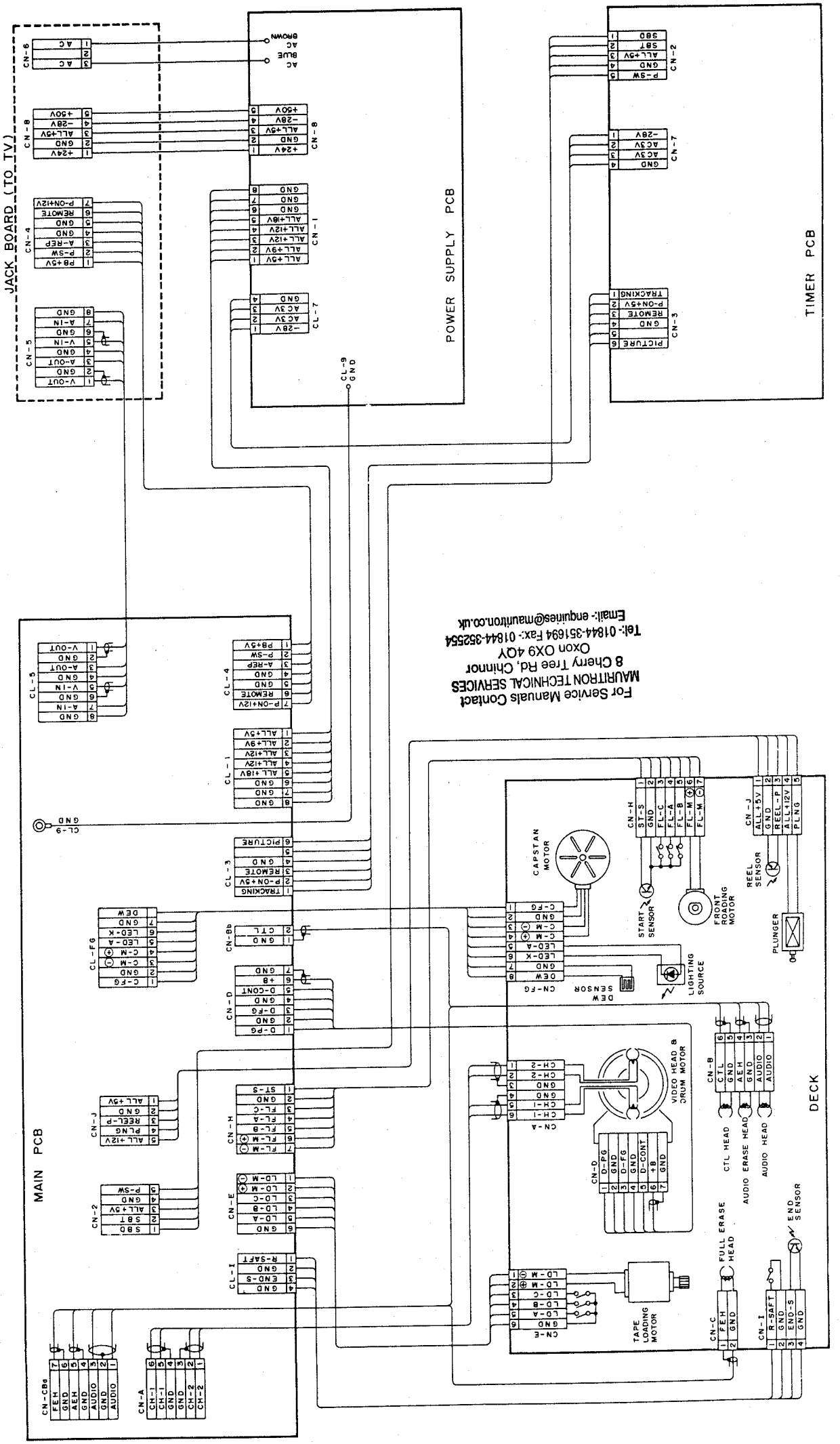
Main PCB (Top View)



Main PCB (Bottom View)



WIRING DIAGRAM
VIDEO SECTION



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Email:- enquiries@mauritron.co.uk

BLOCK DIAGRAM
VIDEO/AUDIO

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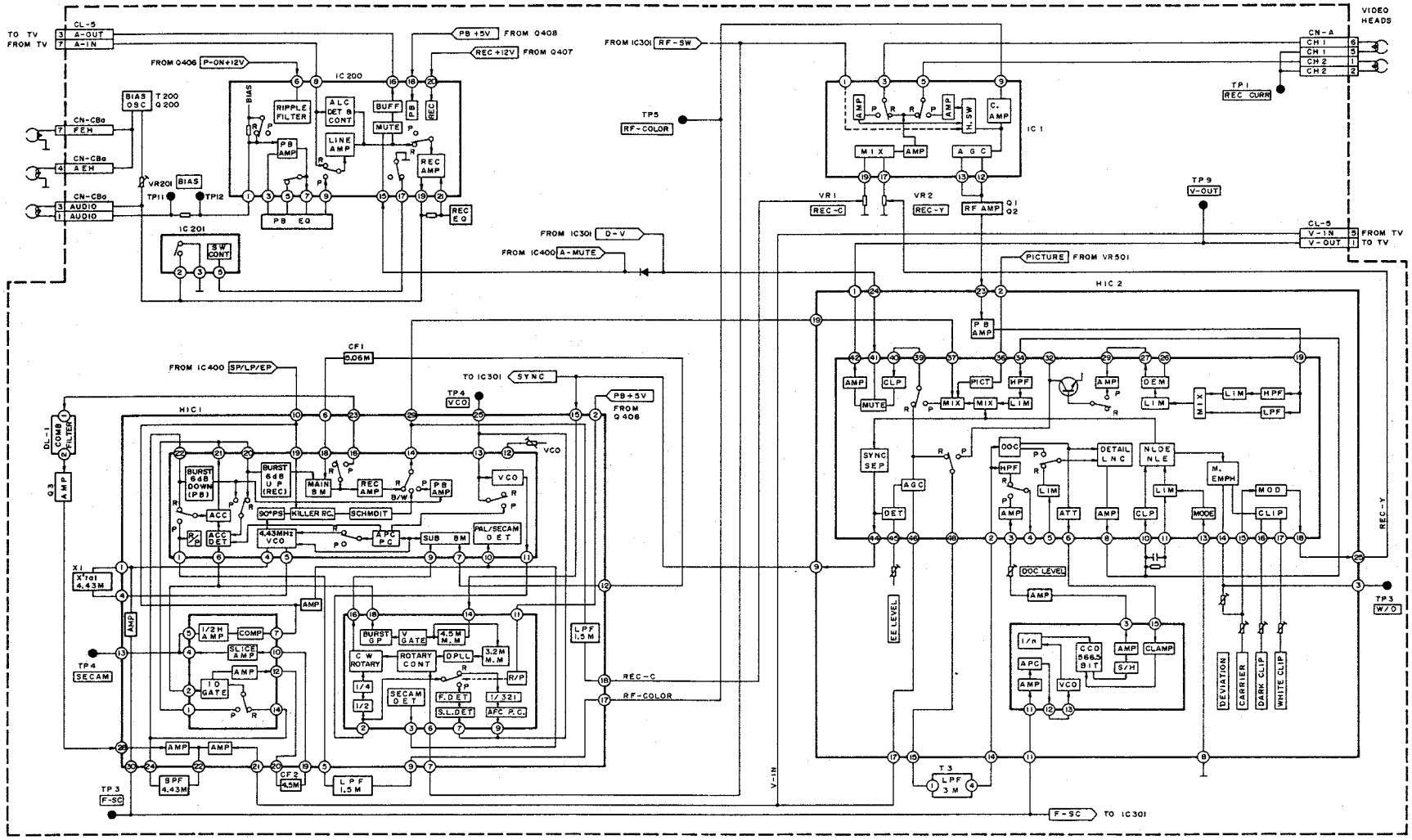

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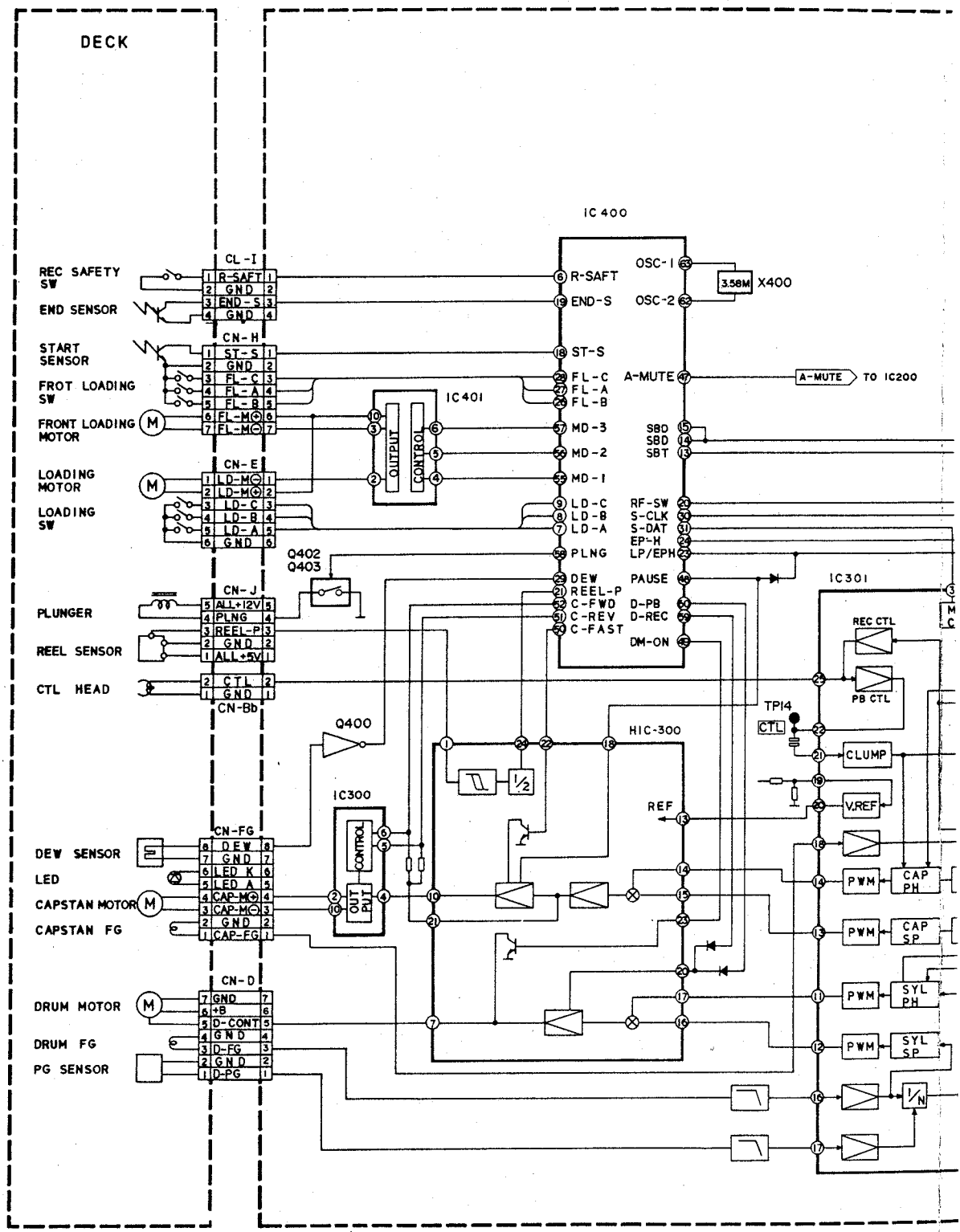

BLOCK DIAGRAM
SERVO/SYSCON/TUNER

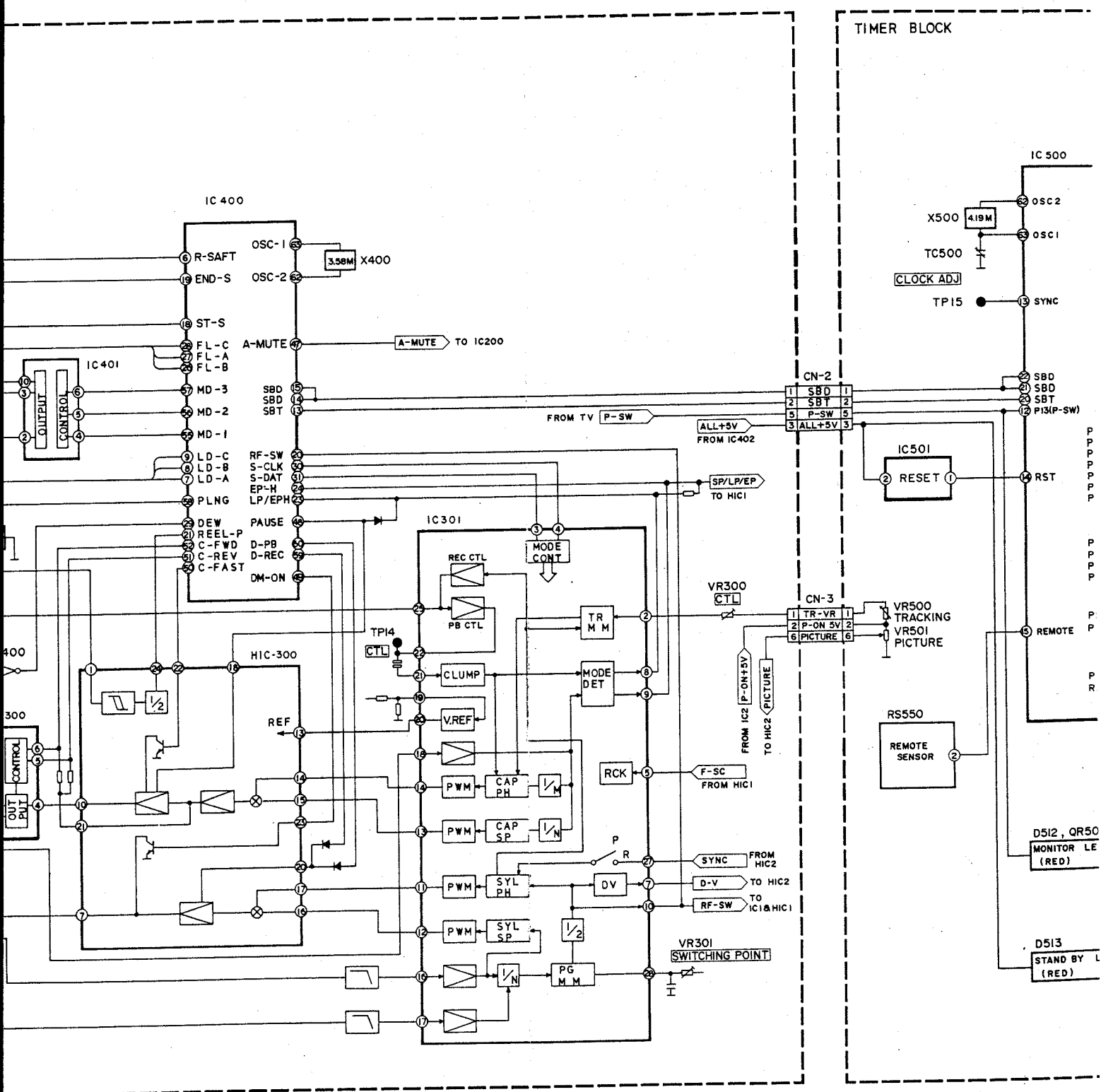

DIAGRAM
CON/TUNER

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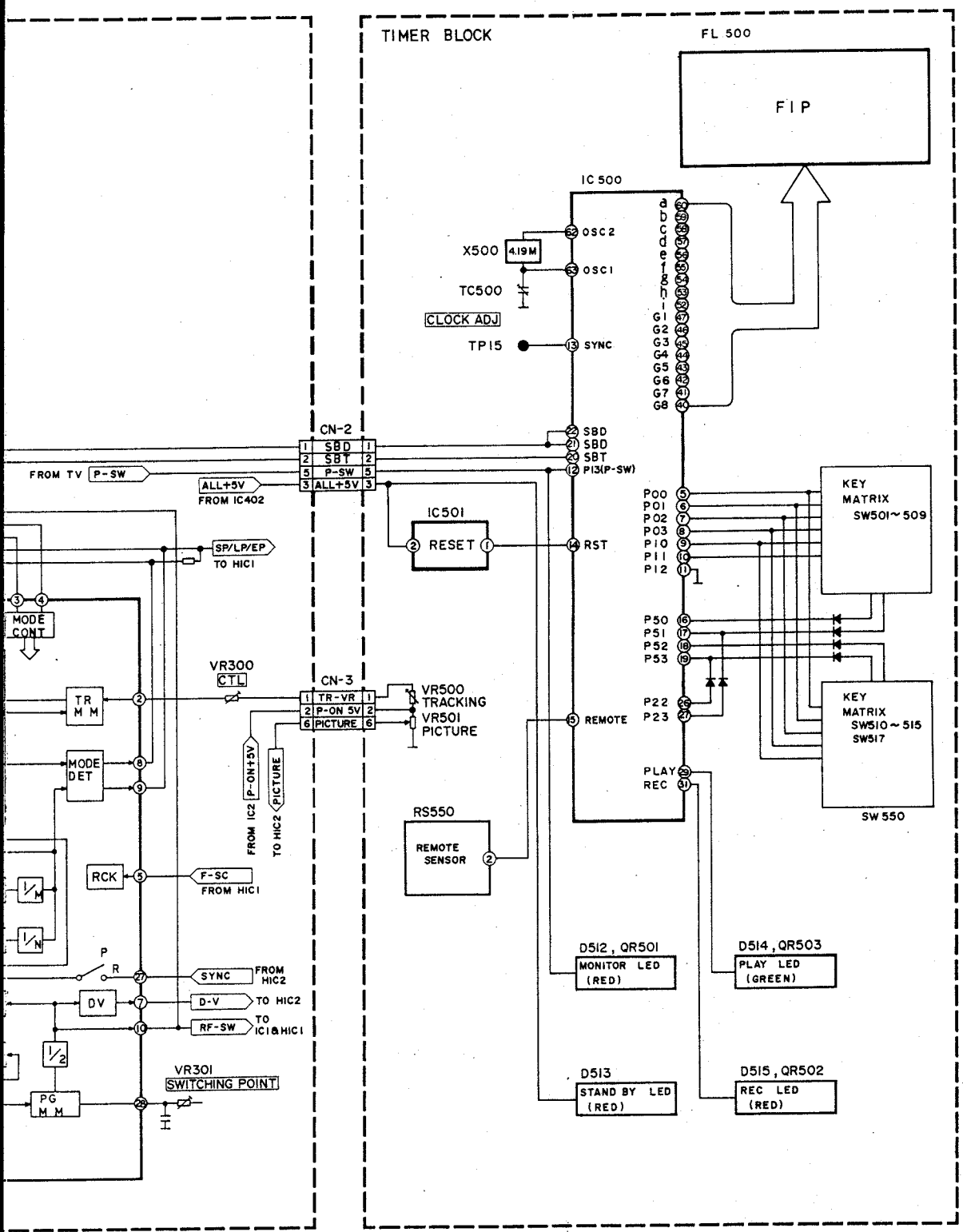
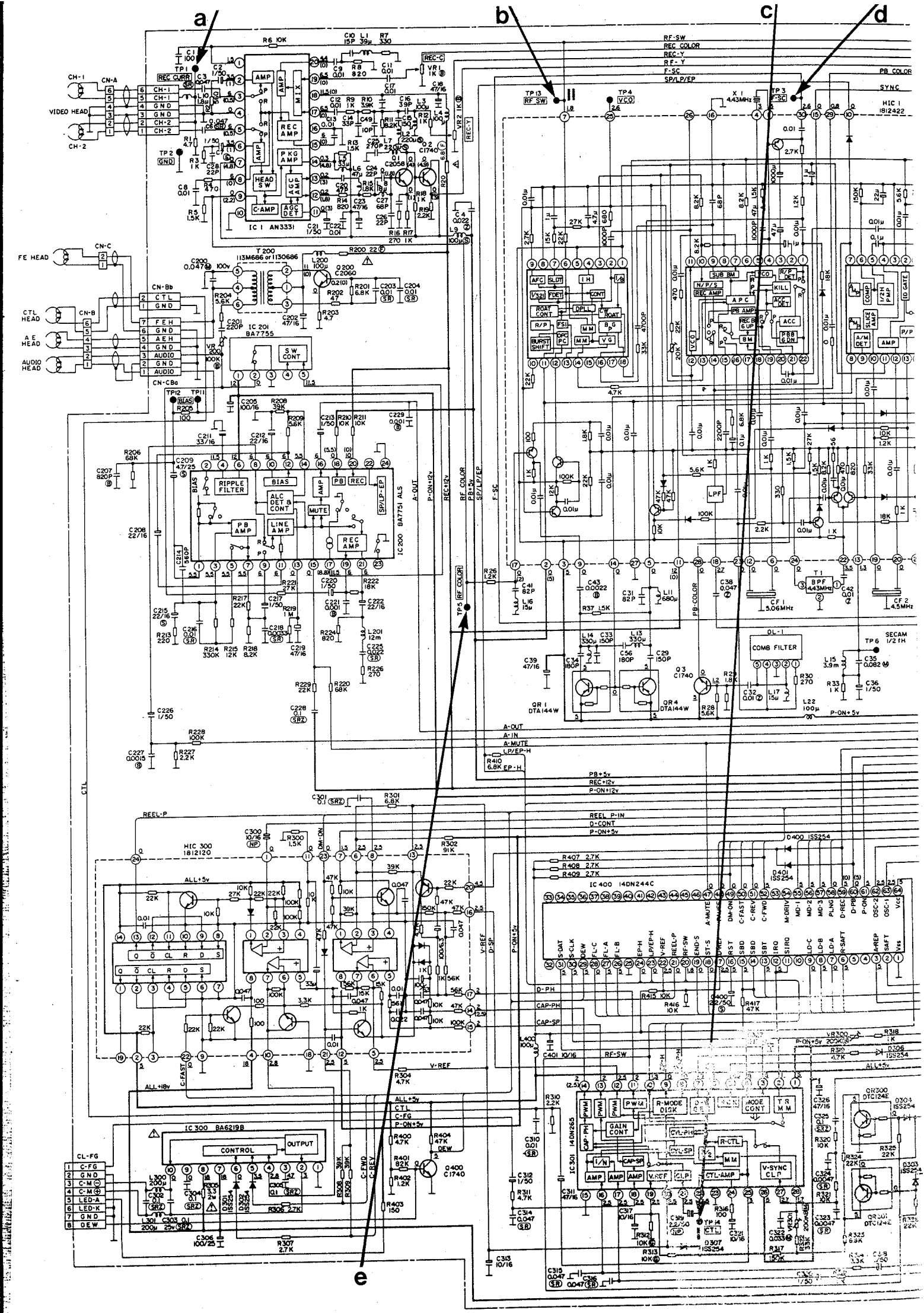
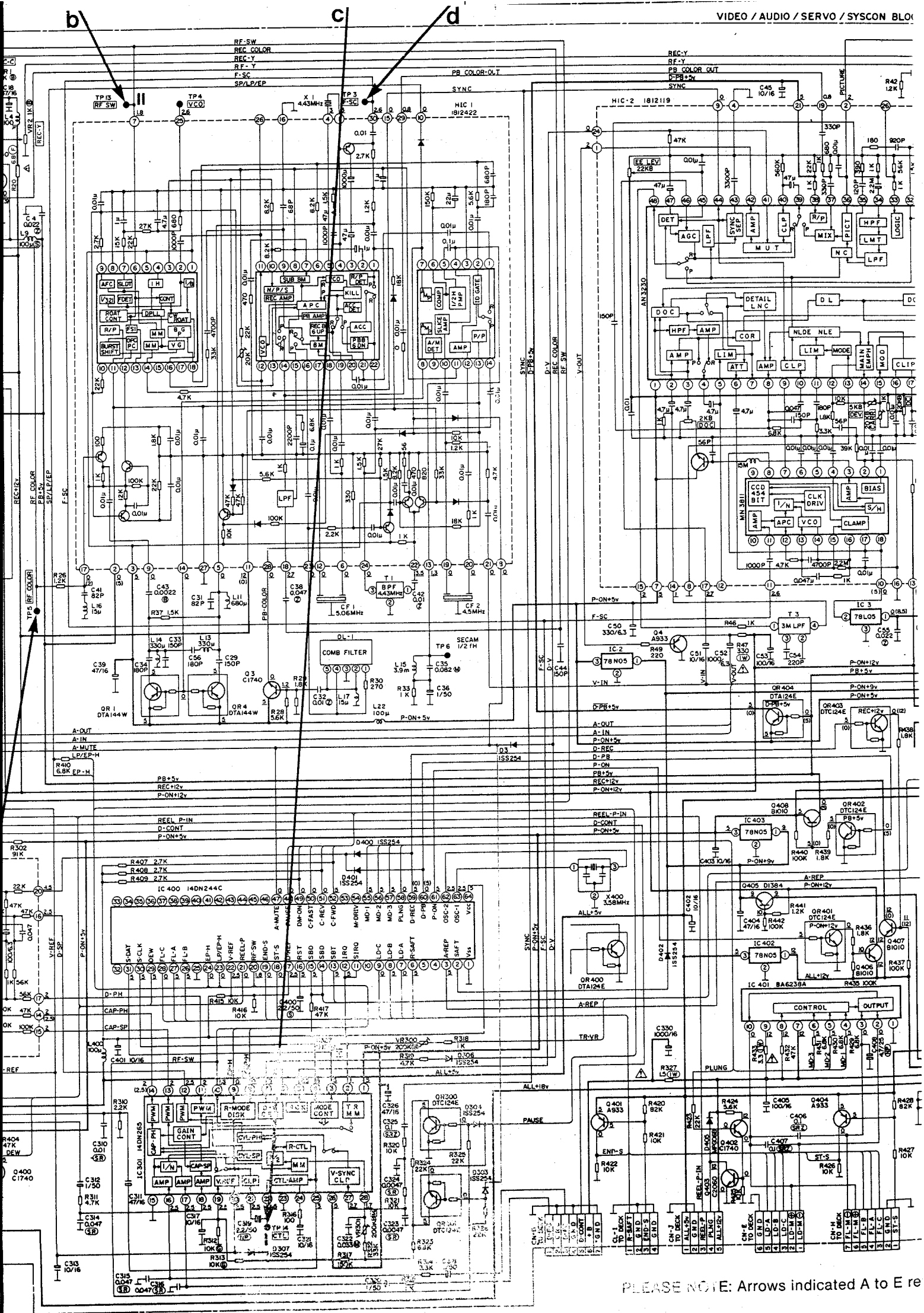
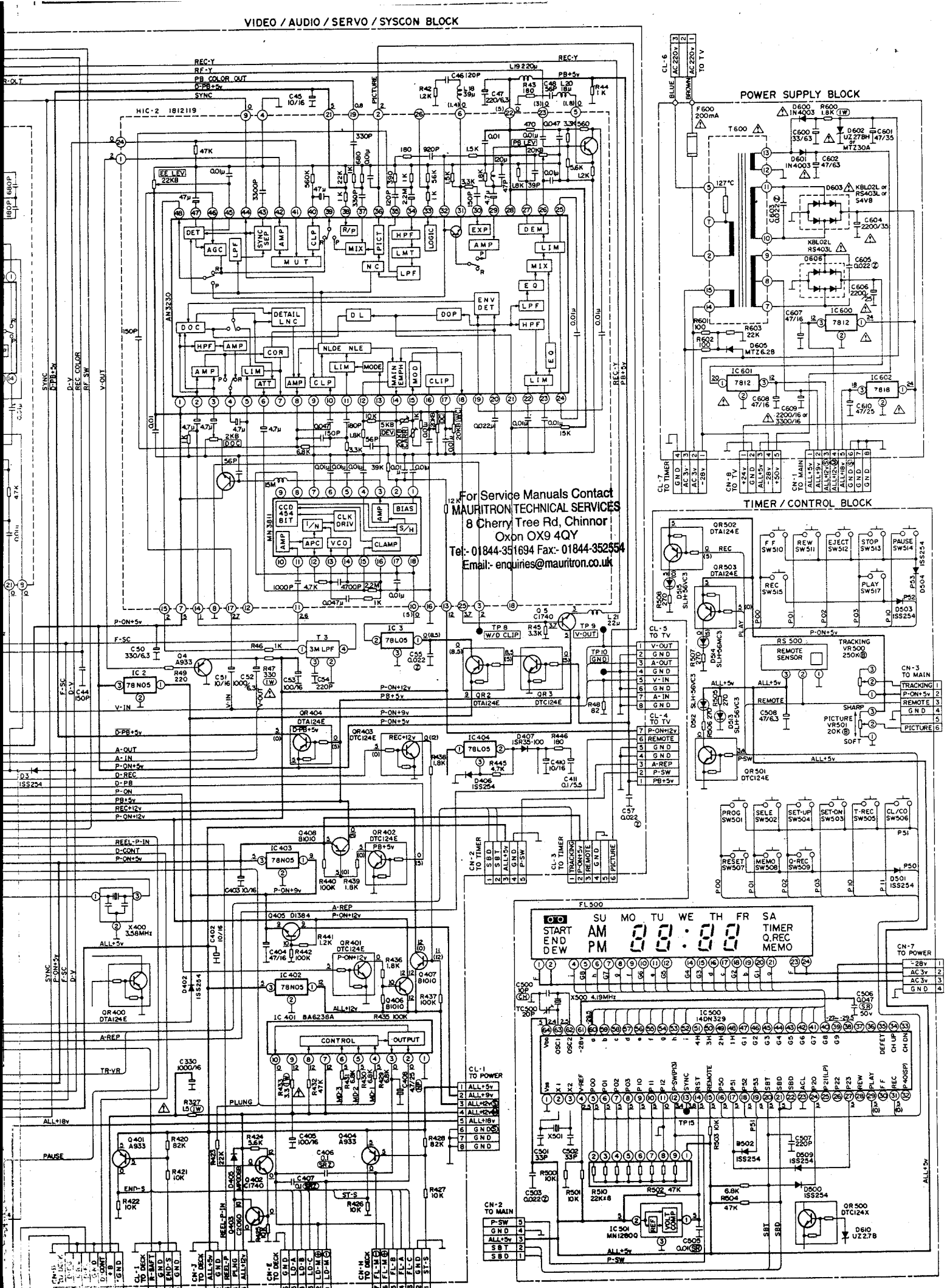



a
b
c
d
e
IC 1 AN3331
IC 201 BA7755
IC 200 BA7751 ALS
IC 300 BA6219B
IC 400 14DN244C
HIC 1 1812422
HIC 300 1812120
T 200 113M686 or 1130686
CN-A
CN-B
CN-C
CN-Bb
CN-Ba
CL-FG
VIDEO HEAD
FE HEAD
CTL HEAD
A E HEAD
AUDIO HEAD
REC CURR
RF-SW
REC COLOR
REC-Y
RF-Y
F-SC
SP/LP/EP
PB COLOR
SYNC
REEL-P
REEL P-IN
D-CONT
P-ON+5v
ALL+5v
ALL+18v
REC+12v
PB+5v
P-ON+12v
RF COLOR
PB-COLOR
A-OUT
A-IN
A-MUTE
LP/EP-H
V-REF
CAP-PH
CAP-SP
D-PH
CTL
C-FG
C-FWD
C-REV
DEW
COMB FILTER
SECAM 1/2 fH
CF 1 5.06MHz
CF 2 4.5MHz
BPF 4.43MHz
X 1 4.43MHz
VCO
LPF
AMP
REC AMP
PB AMP
MUTE
BIAS
RIPPLE FILTER
ALC DET & CONT
SW CONT
CONTROL
OUTPUT
GAIN CONT
R-MODE DISK
MODE CONT
CYL-AMP
V-SYNC CLP
CAP-SP
CAP-PH
CYL-PH
CYL-SP
R-CTL
CTL
DEW
C-FWD
C-REV


b
c
d
RF-SW
REC COLOR
REC-Y
RF-Y
F-SC
SP/LP/EP
PB COLOR-OUT
SYNC
HIC 1
1812422
HIC-2 1812119
AN3230
MN3811
IC 400 14DN244C
IC 401 BA6238A
IC 402 78N05
IC 403 78N05
IC 2 78N05
IC 3 78L05
T1 BPF 4.43MHz
CF1 5.06MHz
CF2 4.5MHz
X1 4.43MHz
X400 3.58MHz
COMB FILTER
SECAM 1/2 1H
REEL-P-IN
D-CONT
P-ON+5v
PB+5v
REC+12v
P-ON+12v
A-OUT
A-IN
A-MUTE
LP/EP-H
D-PH
CAP-PH
CAP-SP
RF-SW
TR-VR
PLUNG
ALL+18v
PAUSE
CONTROL
OUTPUT
PLEASE NOTE: Arrows indicated A to E re


VIDEO / AUDIO / SERVO / SYSCON BLOCK
POWER SUPPLY BLOCK
TIMER / CONTROL BLOCK
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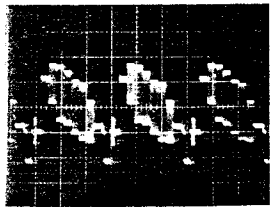
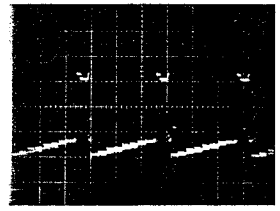
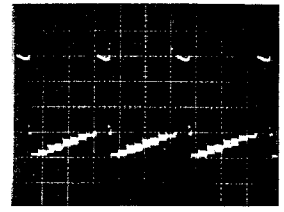
WAVE FORM



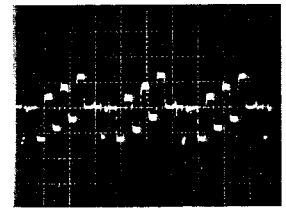
Point : A
1Div=20uS 1Div=0.5V



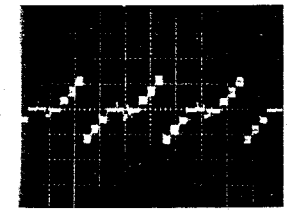
Point : B
1Div=20uS 1Div=2V



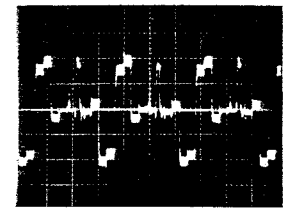
Point : C
1Div=20uS 1Div=0.5V



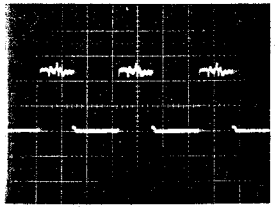
Point : D
1Div=20uS 1Div=1V



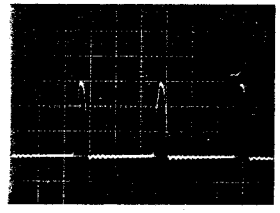
Point : E
1Div=20uS 1Div=0.5V



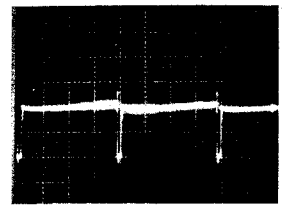
Point : F
1Div=20uS 1Div=0.5V



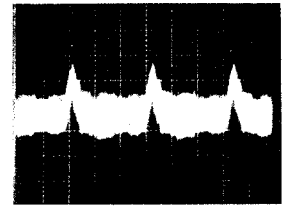
Point : G
1Div=20uS 1Div=0.5V



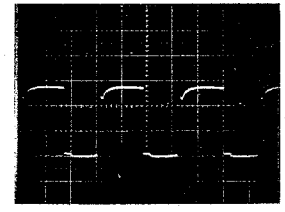
Point : H
1Div=20uS 1Div=10V



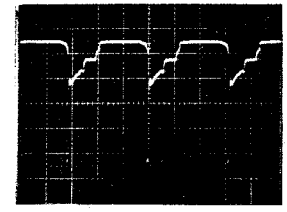
Point : I
1Div=5mS 1Div=0.5V



Point : J
1Div=20uS 1Div=0.1V

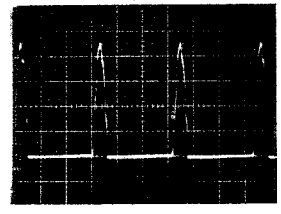


Point : K
1Div=20uS 1Div=50V

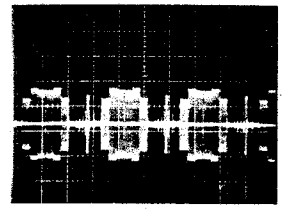


Point : L
1Div=20uS 1Div=2V

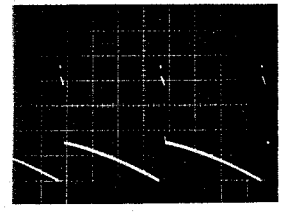
Point : M
1Div=20uS 1Div=250V



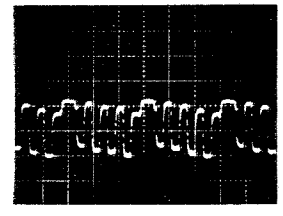
Point : N
1Div=20uS 1Div=5V



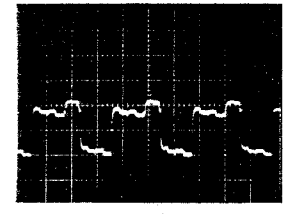
Point : O
1Div=20uS 1Div=0.1V



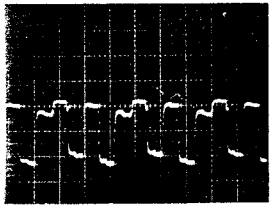
Point : P
1Div=5mS 1Div=10V



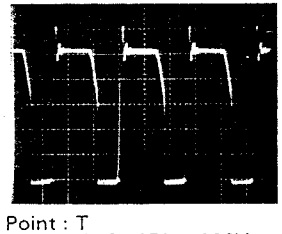
Point : Q
1Div=20uS 1Div=50V



Point : R
1Div=20uS 1Div=50V

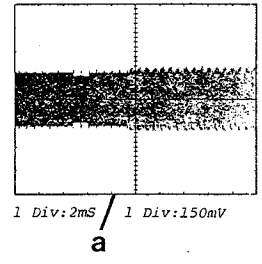


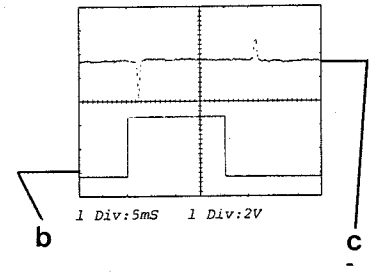
Point : S
1Div=20uS 1Div=50V

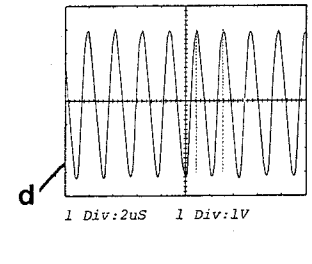


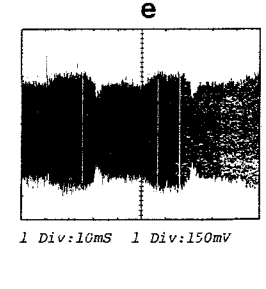
Point : T
1Div=10uS 1Div=100V

Wave Forms referred to on Page 41.









TROUBLESHOOTING GUIDE

ep 1

ush power button and set the TV hannel to receive a local TV tation.

ep 2

nsert cassette tape.

ep 3

ush clock /counter button to OUNTER MODE " 0000 ". ush counter MEMORY button to " 0000 EMO ". Push REC. button.

ep 4

et recording tape speed to SP or LP r EP.

ep 5

ape is automatically rewound when t reached tape end.

ep 6

Push PAUSE button during recording.

ep 7

Push STOP button during recording.

ep 8

Push REW (F.F.) button.

ep 9

VCR automatically stops when counter shows around " 0000 ".

ep 10

Push PLAY button.

Step 11

Check picture during playback.

Step 12

Check the sound during playback.

Step 13

Check the special variable speed playback.

Step 14

Push STOP button during playback.
Push EJECT button.

Step 15

Push power button to OFF.

END

For Service Manuals Contact
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8 Cherry Tree Rd, Chinnor
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Email:- enquiries@mauritron.co.uk

Step 1

Connect power cord into power outlet.

Check display indication " -- : -- ". NG → Check F600, T600 and all output voltage from POWER SUPPLY BLOCK.

OK

Push power button on TV.

TV MONITOR is turn to on. NG

OK

Check ALL +5V line at IC500 pin 64. NG → Check ALL +5V line.

OK

Check IC500 pins 62 and 63. NG → X500 defect.

OK

Check P-SW signal at IC500 pin 12 is " H ". NG → Check P-SW line and TV section.

OK

Check SBT and SBD at IC500 pins 20 and 21. Does it change when push the power switch. NG → IC500 defect.

OK

Check ALL +5V at IC400 pin 64. NG → Check ALL +5V line.

OK

Check IC400 pins 62 and 63. NG → X400 defect.

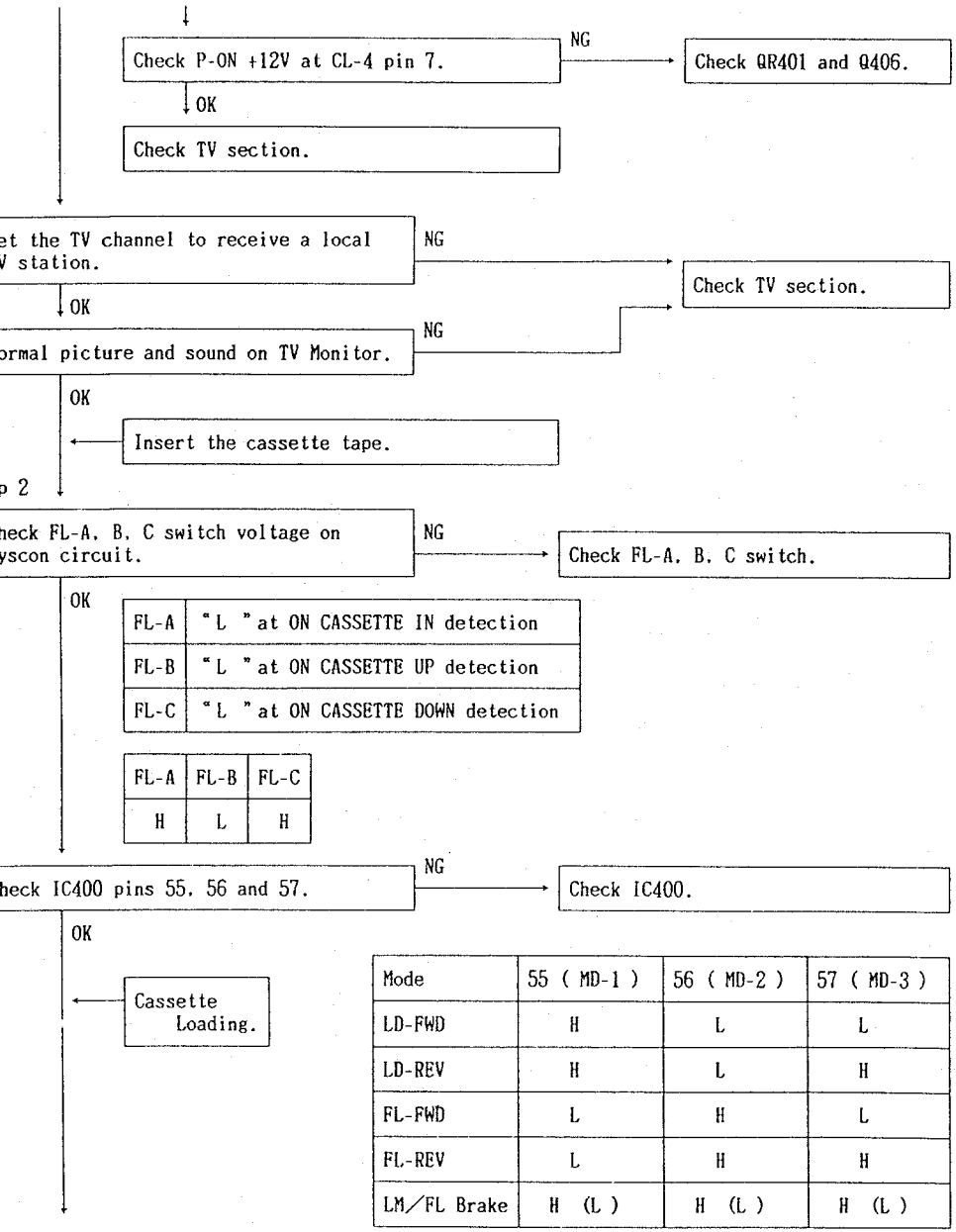
OK

Check P-ON signal at IC400 pin 61 " H ". NG → Check LD-A, B, C, on IC400. (See table 2) NG → Check LD-A, B, C, switch on deck .

OK

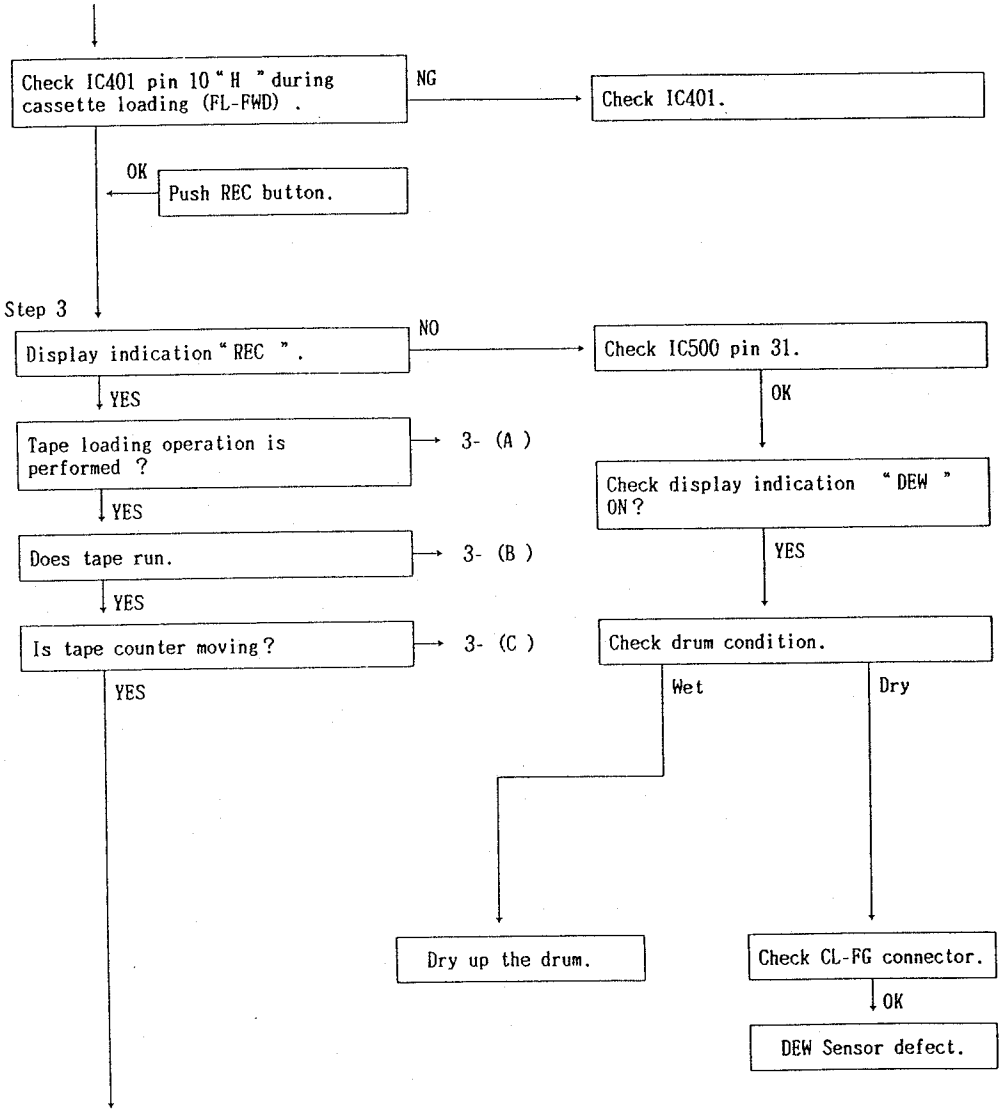
OK → IC400 defect.

OK



Mode	55 (MD-1)	56 (MD-2)	57 (MD-3)
LD-FWD	H	L	L
LD-REV	H	L	H
FL-FWD	L	H	L
FL-REV	L	H	H
LM/FL Brake	H (L)	H (L)	H (L)

Table 1.



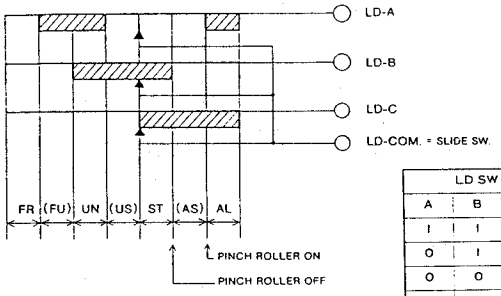
(A)

Check LD-A, B, C. (See Table 2.)

OK

* When SYSTEM CONTROL IC has run away SYSTEM CONTROL IC will not accept any mode. At this time, must AC CORD disconnect to reset the SYSTEM CONTROL IC.

Position of loading switch



LD SW A	LD SW B	LD SW C	Symbol	Position
1	1	1	FR (FR LOADING)	FF. REW
0	1	1	(FU)	
0	0	1	UN (UN-LOADING)	STOP EJECT
1	0	1	(US)	
1	0	0	ST (SHORT STOP)	Loading motor is stopped temporarily at unloading.
1	1	0	(AS)	
0	1	0	AL (AFTER-LOADING)	PLAY RECPAUSE SHORT REW

0:MAKE 1:BREAK

Break means intermediate position.

Table 2.

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Check IC401 pin 10 " H " and pin 2 " L ". — NG → Check IC400 pins 55, 56 and 57 voltage. — NG → Check IC400.

OK

Check CN-E connector.

OK

Check loading motor.

See Table 1.

3- (B)

Check IC400 pin 52 voltage " H ". — NG → Check IC400.

OK

Check IC300 pin 10 " L " and pin 2 " H ". — NG → IC300 defect.

OK

Check CL-FG connector.

OK

Check capstan motor.

3- (C)

Check pin 3 of CN-J connector. (Reel pulse) — NG → Check reel sensor.

OK

Check IC400 pin 21. — NG → Check HIC300.

OK

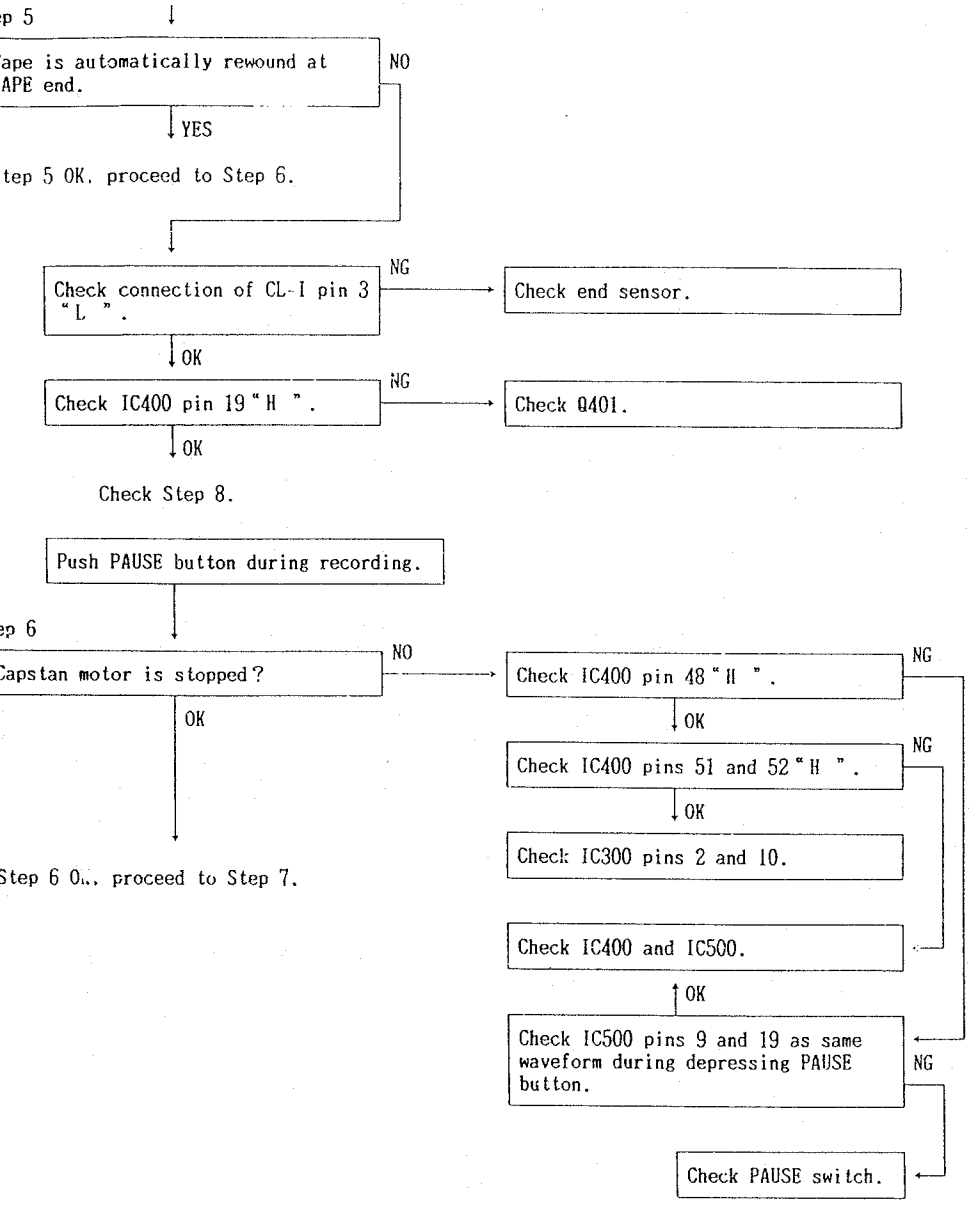
Check IC501.

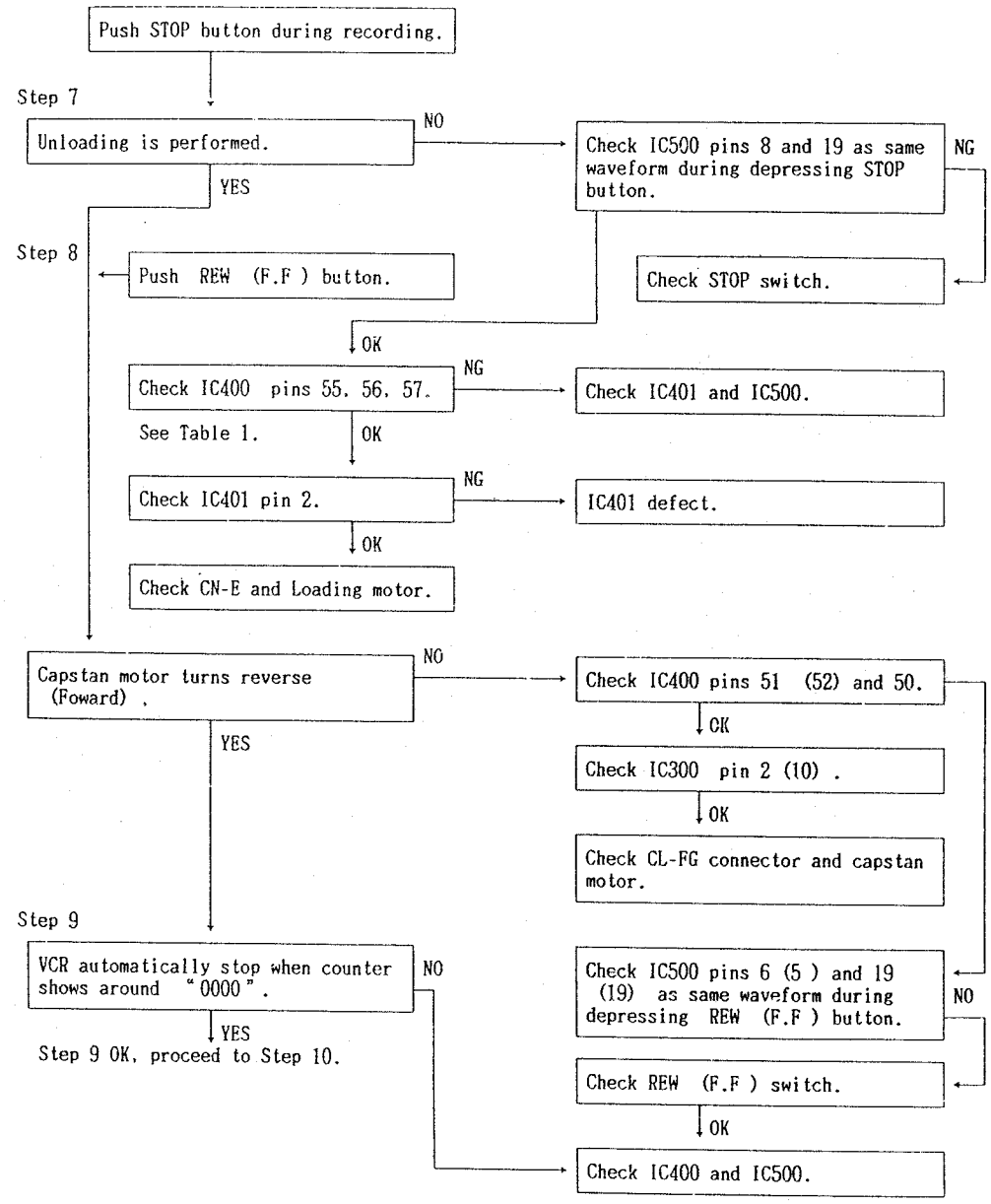
Step 4

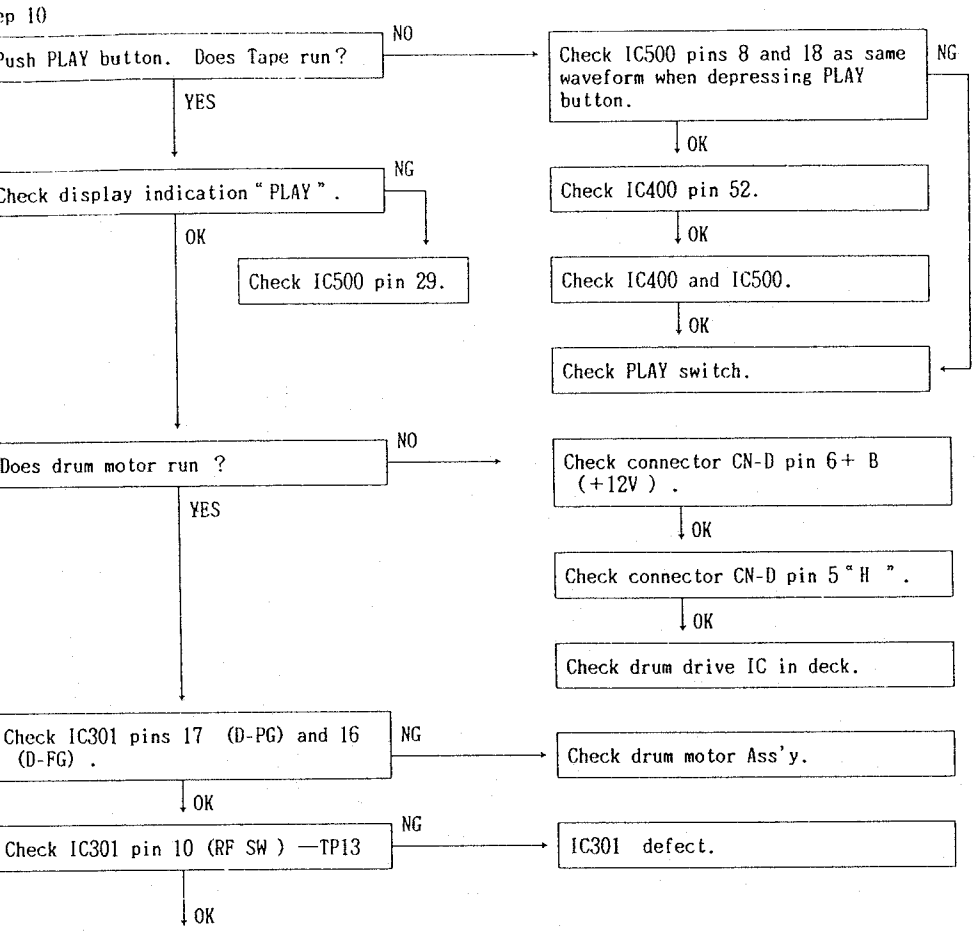
Does tape speed change? — NO → Check IC400 pins 23 and 24.

YES

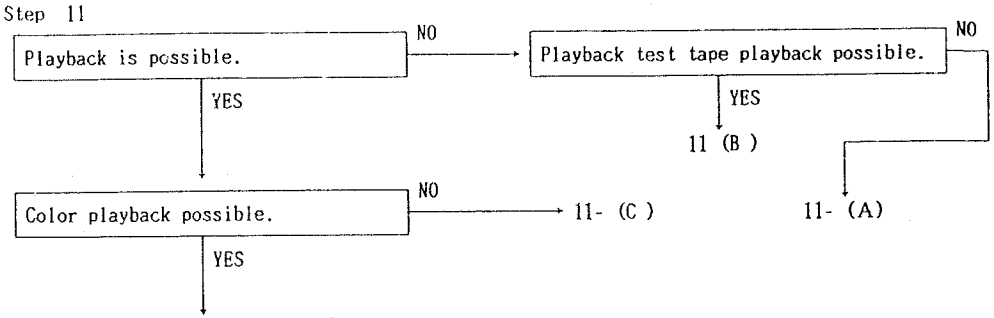
	23	24
SP MODE	L	L
LP MODE	H	L
EP MODE	H	H


ep 5
ape is automatically rewound at APE end.
NO
YES
tep 5 OK, proceed to Step 6.
Check connection of CL-I pin 3 "L".
NG
Check end sensor.
OK
Check IC400 pin 19 "H".
NG
Check Q401.
OK
Check Step 8.
Push PAUSE button during recording.
ep 6
Capstan motor is stopped?
NO
OK
Step 6 O.., proceed to Step 7.
Check IC400 pin 48 "H".
NG
OK
Check IC400 pins 51 and 52 "H".
NG
OK
Check IC300 pins 2 and 10.
Check IC400 and IC500.
OK
Check IC500 pins 9 and 19 as same waveform during depressing PAUSE button.
NG
Check PAUSE switch.

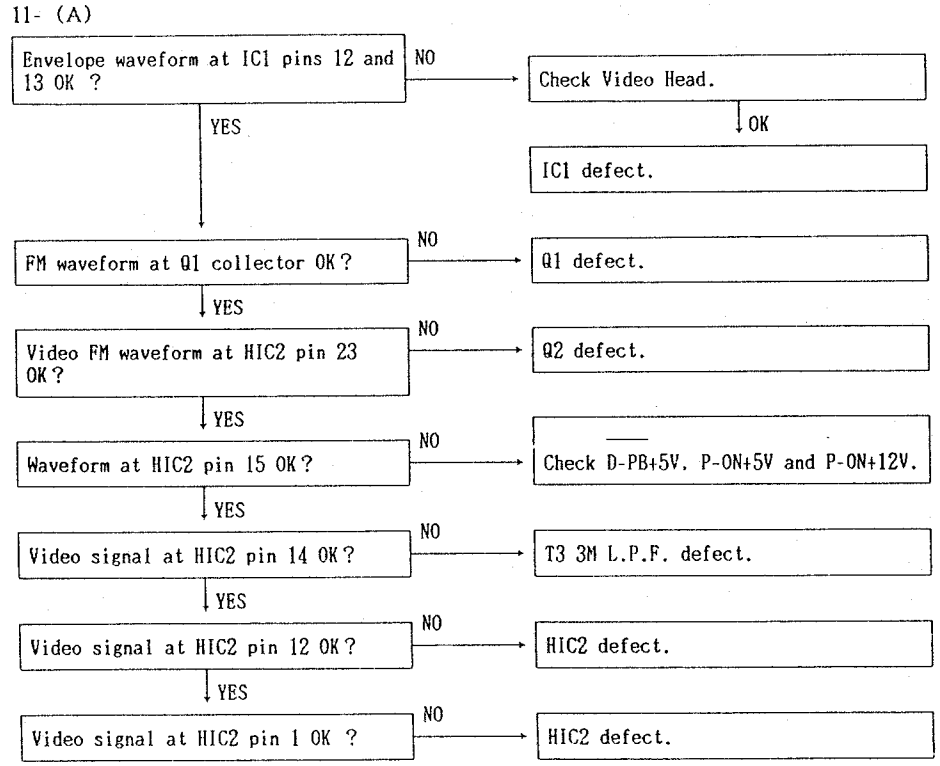

Push STOP button during recording.
Step 7
Unloading is performed.
NO
YES
Check IC500 pins 8 and 19 as same waveform during depressing STOP button.
NG
Check STOP switch.
Step 8
Push REW (F.F) button.
OK
Check IC400 pins 55, 56, 57.
NG
See Table 1.
OK
Check IC401 and IC500.
Check IC401 pin 2.
NG
OK
IC401 defect.
Check CN-E and Loading motor.
Capstan motor turns reverse (Foward).
NO
YES
Check IC400 pins 51 (52) and 50.
OK
Check IC300 pin 2 (10).
OK
Check CL-FG connector and capstan motor.
Step 9
VCR automatically stop when counter shows around "0000".
NO
YES
Step 9 OK, proceed to Step 10.
Check IC500 pins 6 (5) and 19 (19) as same waveform during depressing REW (F.F) button.
NO
Check REW (F.F) switch.
OK
Check IC400 and IC500.

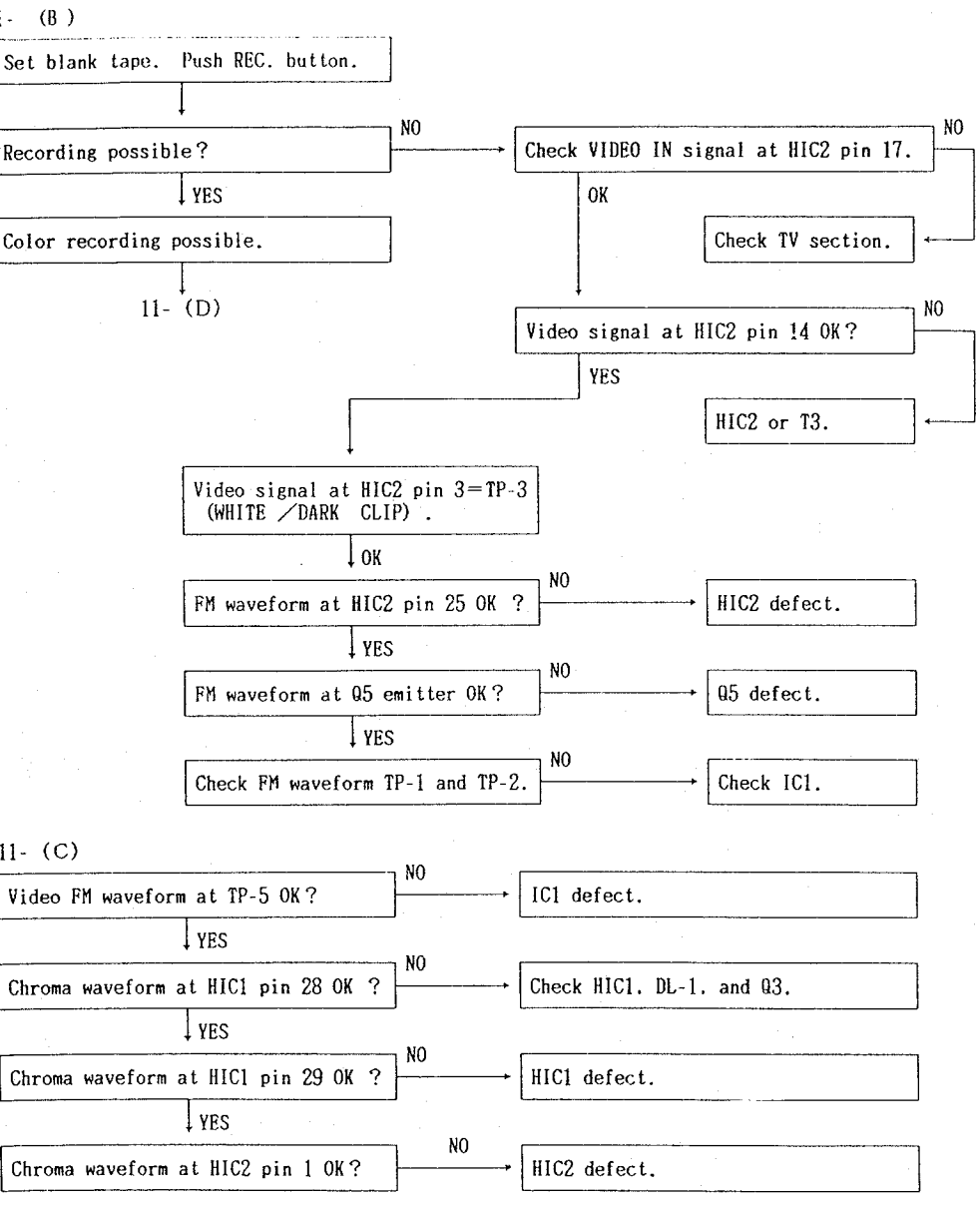


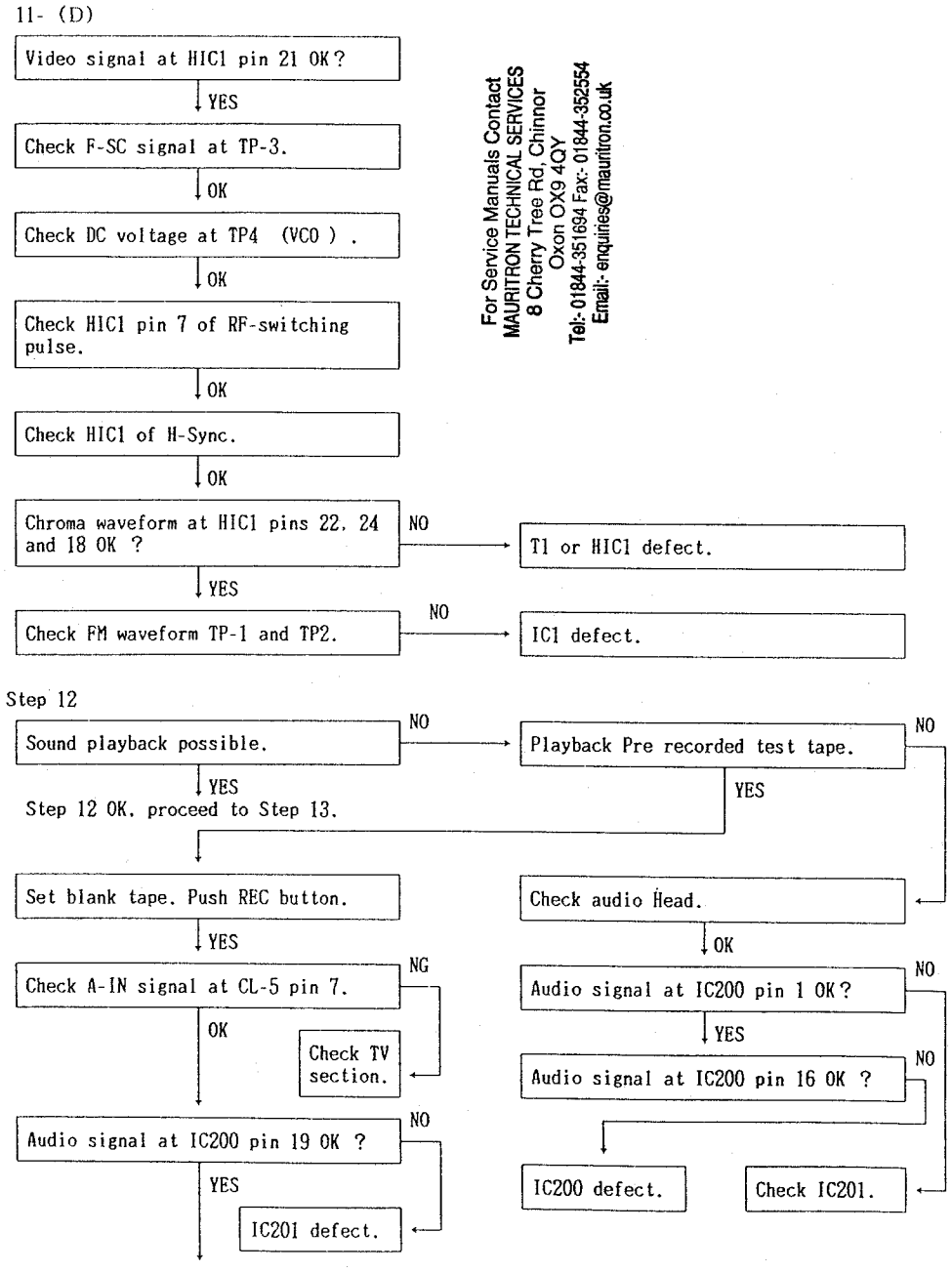
Step 10 OK, proceed to Step 11.



Step 11 OK, proceed to Step 12.







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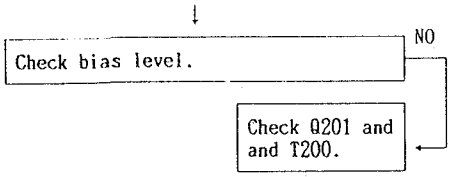
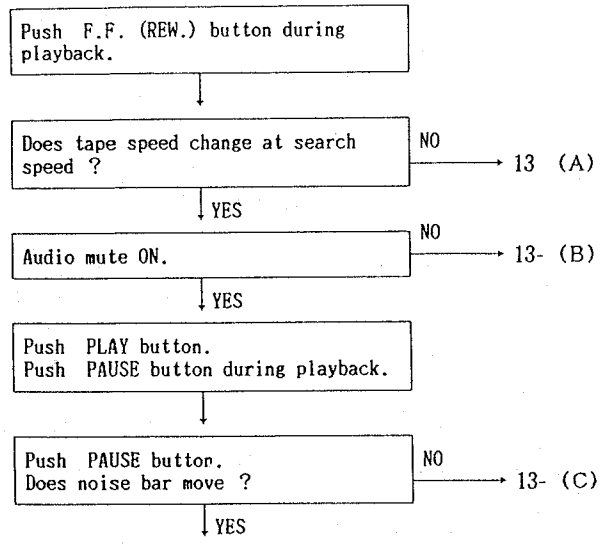
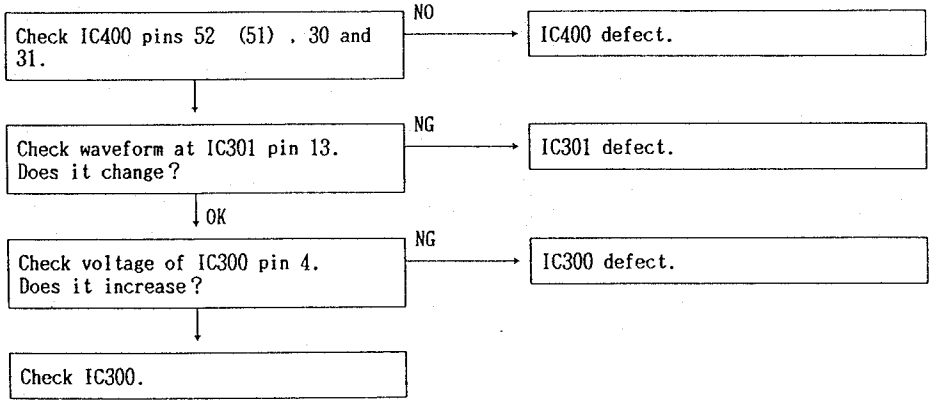


Step 13

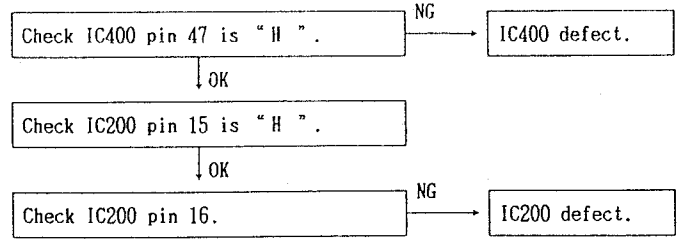


Step 13 OK, proceed to step 14.

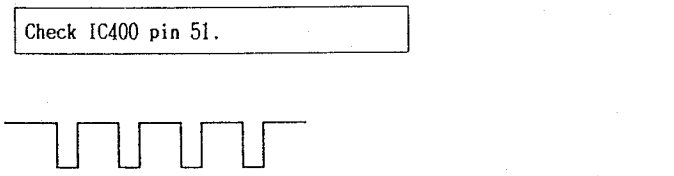
13- (A)



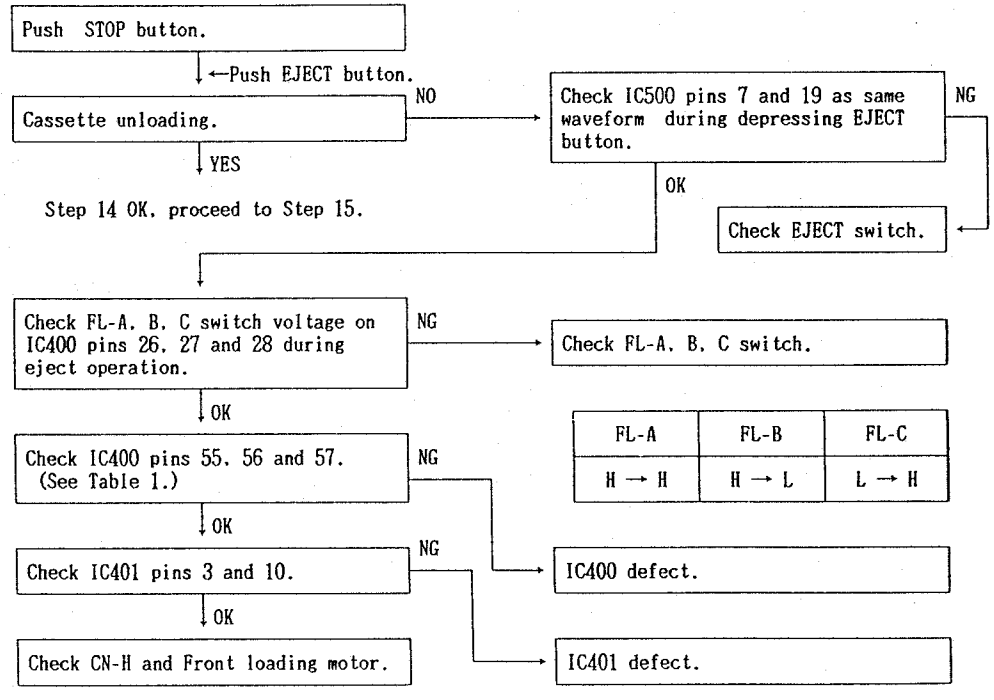
13- (B)



13- (C)

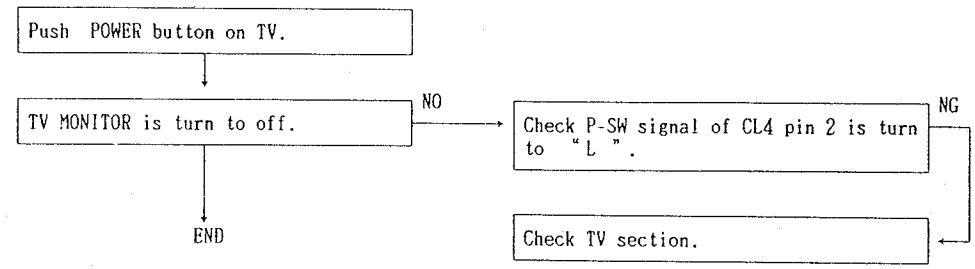


Step 14



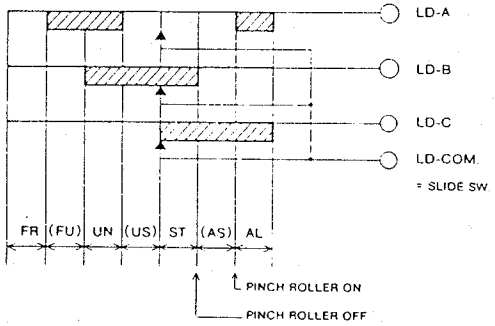
FL-A	FL-B	FL-C
H → H	H → L	L → H

Step 15



*When SYSTEM CONTROL IC has run away SYSTEM CONTROL IC will not accept any mode. At this time disconnect AC cord to reset the SYSTEM CONTROL IC.

Position of loading switch



LD SW A	LD SW B	LD SW C	Symbol	Position
I	I	I	FR (FR LOADING)	FF. REW
O	I	I	(FU)	
O	O	I	UN (UN-LOADING)	STOP EJECT
I	O	I	(US)	
I	O	O	ST (SHORT STOP)	Loading motor is stopped temporarily at unloading.
I	I	O	(AS)	
O	I	O	AL (AFTER-LOADING)	PLAY RECPAUSE SHORT REW

O:MAKE I:BREAK

Break means intermediate position.

Table 2.

ELECTRICAL ADJUSTMENT

MEASUREMENT INSTRUMENT :

SWEEP GENERATOR	LEADER	LSW-480
SWEEP OSCILLOSCOPE	MEGURO	MCS-983C

No.	ITEM	TEST POINT	ADJUSTMENT POINT	METHOD	CONNECTION FIGURE
1	39.50MHz peak.	TP1 GND TP3 TP7	L1806	1. Set AFC switch to OFF position. 2. Select Sweep Generator output to −10dB−20dB. 3. Supply AGC bias with Fig-2 circuit maximum output before clipping. 4. Adjust by L1806 to maximum the 39.50MHz maker as Fig-3.	Fig-1
2	Video Band	TUNER TP GND TP1 GND TP7		1. Set AFC switch to OFF position. 2. Connect 10-ohm resistor between TP1 and TP7 to kill rectify coil. 3. Supply IF AGC bias with Fig-2 circuit to maximum output before clipping. 4. Make sure the waveform becomes as Fig-5. 5. Remove 10-ohm resistor between TP5 and TP6.	Fig-4
3	AFC curve	TUNER TP TP1 GND TP9	L1805	1. Disconnect CN1301. 2. Set AFC switch to ON position. 3. Adjust by L1805 to become waveform as Fig-7. 4. Connect CN1301.	Fig-6
4	SIF S curve	TP1 GND TP3 TP8		1. Adjust attenuator of sweep generator to waveform become as Fig-9. 2. Make sure linear curve between −50KHz and +50KHz MARKER.	Fig-8
5	RF AGC	TP10	VR1801	1. Set any channel to receive. 2. Supply 80 dB to input. 3. Adjust by VR1801 to 4.5V at TP10 voltage.	

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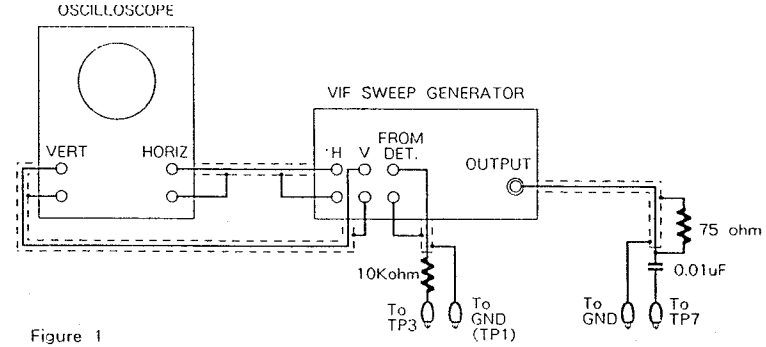


Figure 1

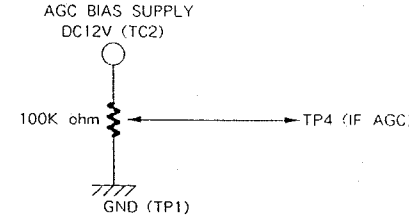


Figure 2

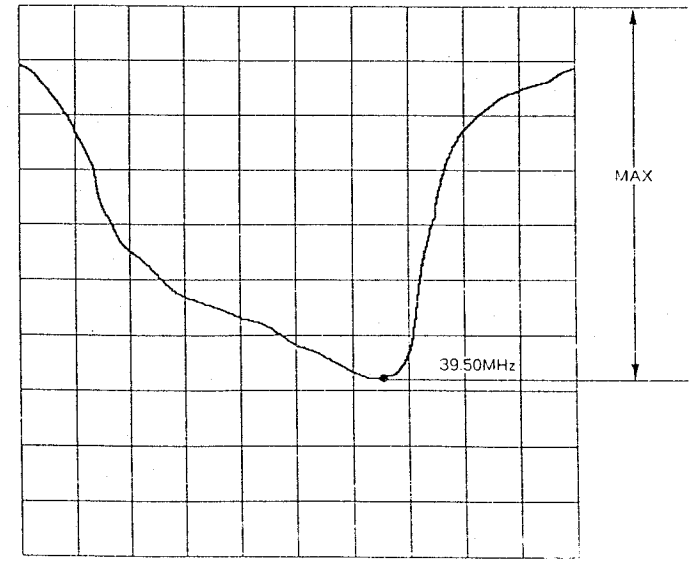


Figure 3

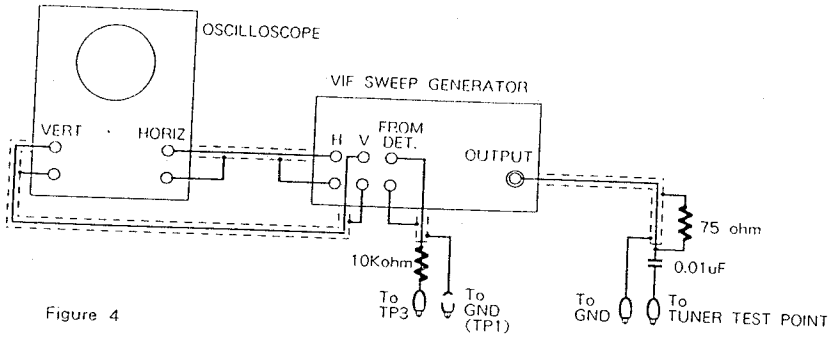


Figure 4

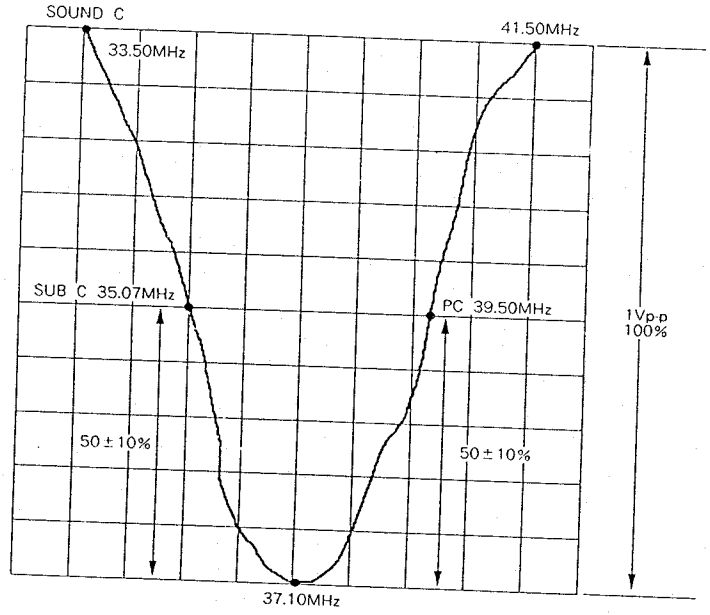


Figure 5

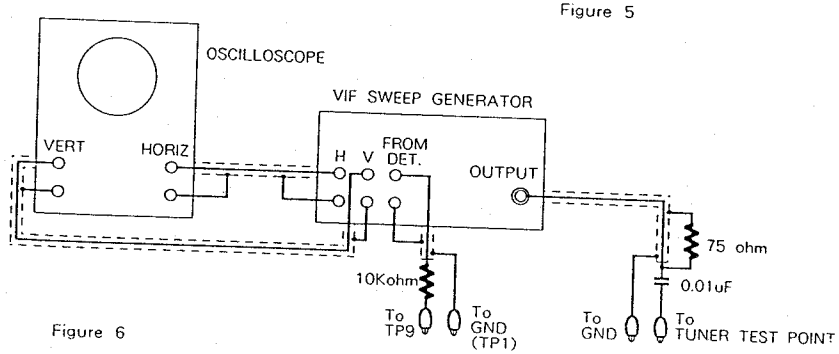


Figure 6

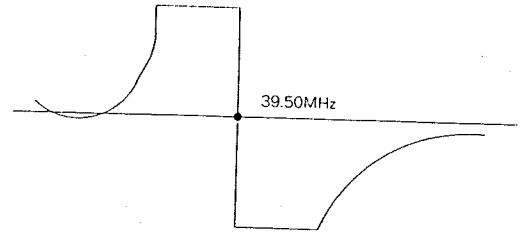


Figure 7

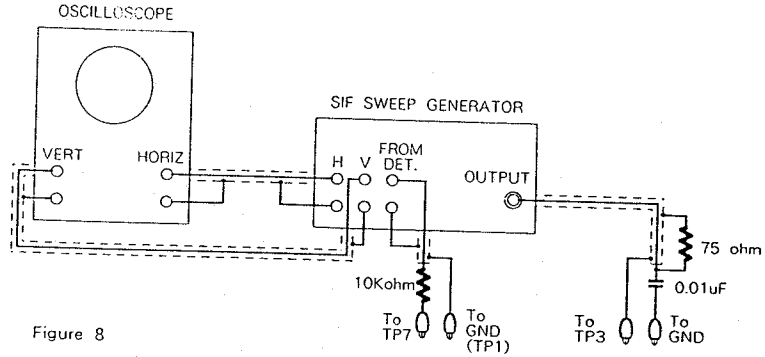


Figure 8

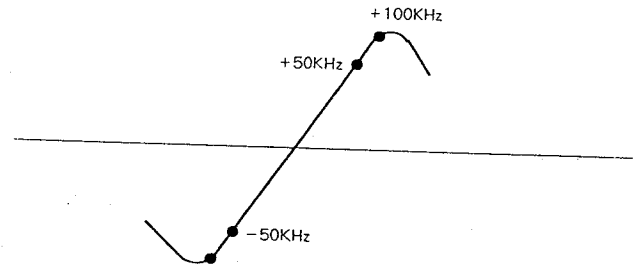


Figure 9

6 FOCUS

1. Set the CONTRAST and BRIGHTNESS control to maximum.
2. Adjust the Focus control of VR to sharp and clear on display.

7 CUT-OFF ADJUSTMENT

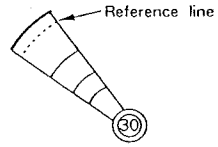
1. Turn the all Low Light controls (VR1702, VR1703, VR1705) to ⅓ position.
2. Turn the B Drive (VR1701) and R Drive (VR1704) controls to center.
3. Set the SUB BRT control (VR1602) to center position.
4. Set the SCREEN control of FBT (T1402) to minimum.
5. Set the SERVICE switch (SW1601) to service position.
6. Slowly turn the SCREEN control to the point where horizontal bar just illuminates.
7. If horizontal bar is red, turn the B LOW-LIGHT control (VR1703) to get magenta.
   If horizontal bar is blue, turn the R LOW-LIGHT control (VR1702) to get magenta.
8. Turn the G LOW-LIGHT control to get white horizontal bar.
9. Reset the SERVICE switch (SW1601) to NORMAL position.

8 V-SIZE

1. Receive the monoscope pattern.
2. Adjust overscan with the VR1401 to 93% of display size.

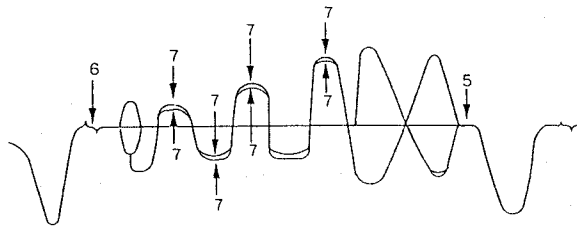
9 SUB-BRIGHTNESS

1. Receive the monoscope pattern (APL75%).
2. Set the CONTRAST control to max and the BRIGHTNESS, COLOR control to min.
3. Adjust VR1602 to the point where referencce line just start illuminate.



10 COLOR DEMODURATOR DELAY LINE

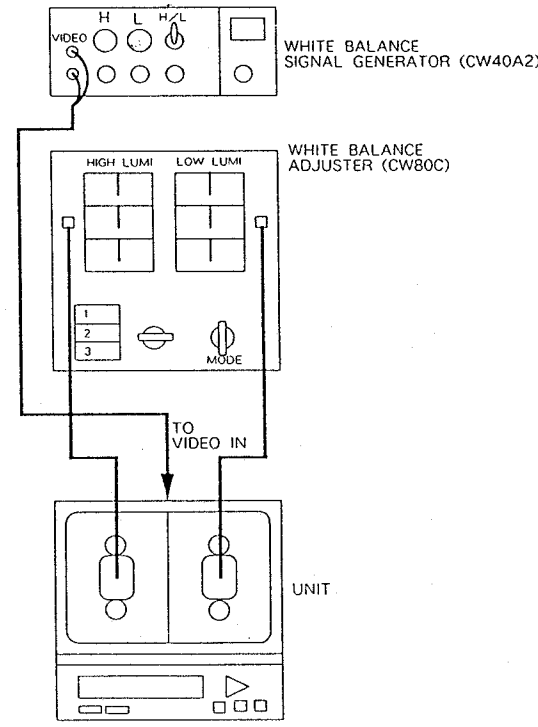
1. Receive philips pattern (2ch, 80dB μ) with AFT off position, and set AFT to on position.
2. Turn the COLOR, CONTRAST control to max, BRIGHT control to min.
3. Connect TP1805 (B−Y output) and TP1806 (GND) to oscilloscope.
4. Input external sync. to anode side of D1404 from EXT TRIG terminal of oscilloscope.
5. Adjust the GAIN control (VR1601) to as following drawing.
6. Adjust the PHASE control (VR1603) to as following drawing.
7. Adjust the DELAY control (VR1604) to as following drawing.
8. Repeat above step 5~7 until to get best point of these three.



11 WHITE BALANCE

Preparations :

1. Adjustment should be conducted in dark place (shielded sun light)
2. Under european magnetic shield (V : 0.44, H : 0.18)
3. All other adjustments should be done.
4. Module of white balance meter shlould be memorized as color temperature 6500° K, x=312, y=322.
5. Set MODE SELECT switch of white balancer to ZERO.
6. Lie down the light sensor of white balancer to shut out light.
7. Adjust ZERO ADJ control to center on meter.
8. Connect the white balance meter as following drawing.



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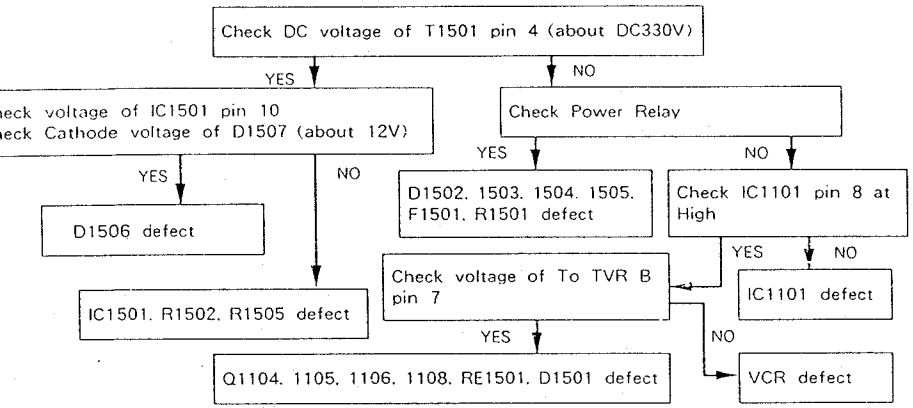
Adjustment :

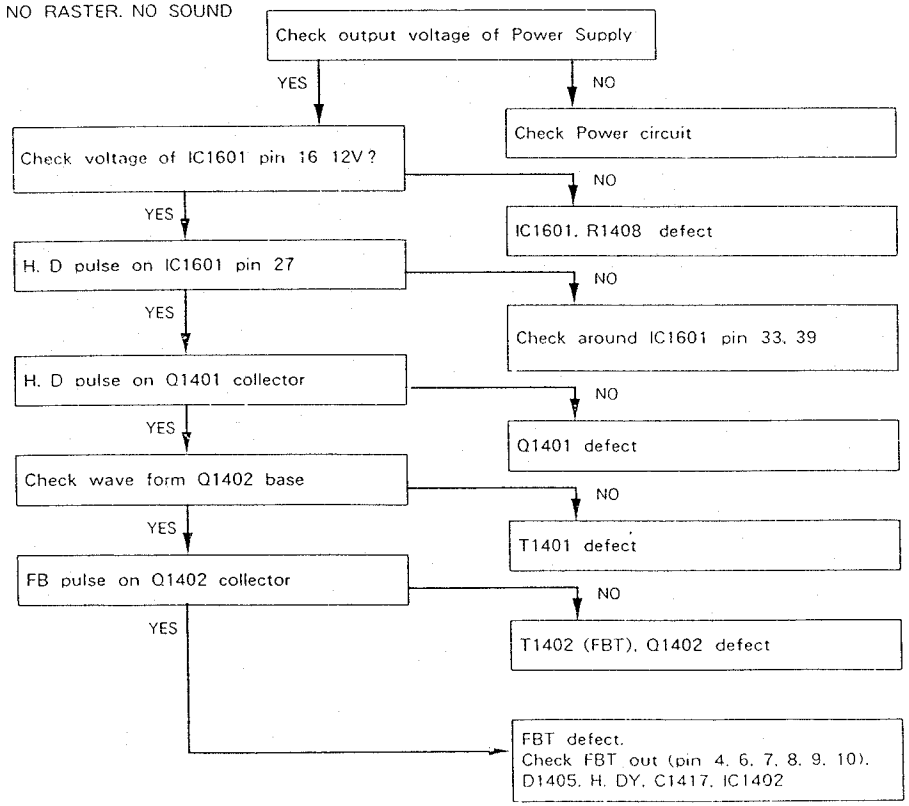
1. Set the PHOSPHOR SELECT switch of balancer to as memorized module position.
2. Set MODE SELECT switch of balancer to LOW SENS.
3. Set AUTO/MANUAL switch of signal generator to AUTO.
4. Set MODE SELECT switch of signal generator to H/L.
5. Adjust BRIGHT, CONTRAST control of VR, and HIGH, LOW control of signal generator to center of LOW LUMI and HIGH LUMI meters.
6. Adjust R DRIVE (VR1704) and B DRIVE (VR1701) to center of HIGH LUMI meter.
7. Adjust R CUT-OFF VR (VR1705) and B CUT-OFF VR (VR1702) to center of LOW LUMI meter.
8. Repeat step 6 and 7 until to get center indication on all meters.
9. Repeat step 6 and 7 until to get with-in 2% of meter indication even change MODE SELECT switch to HIGH SENS.

TROUBLESHOOTING GUIDE

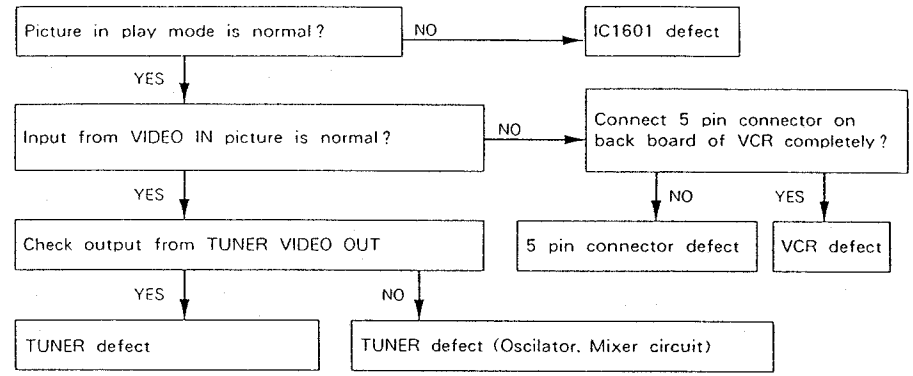
NO POWER OUTPUT



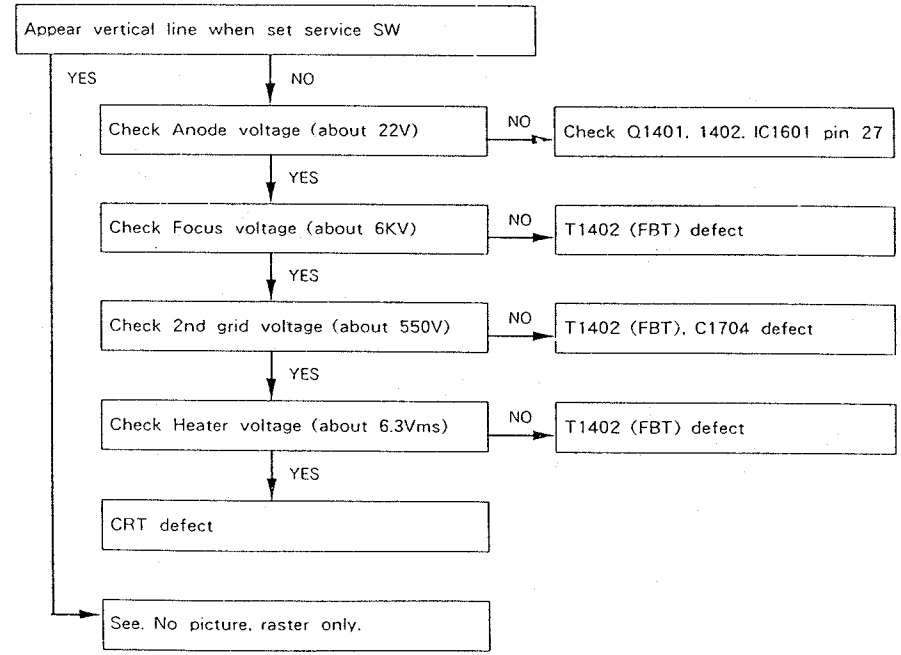
NO RASTER. NO SOUND



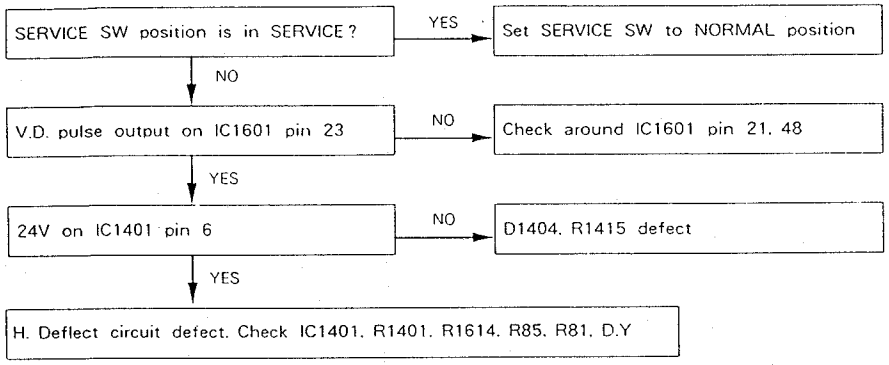
(3) NO PICTURE. RASTER ONLY



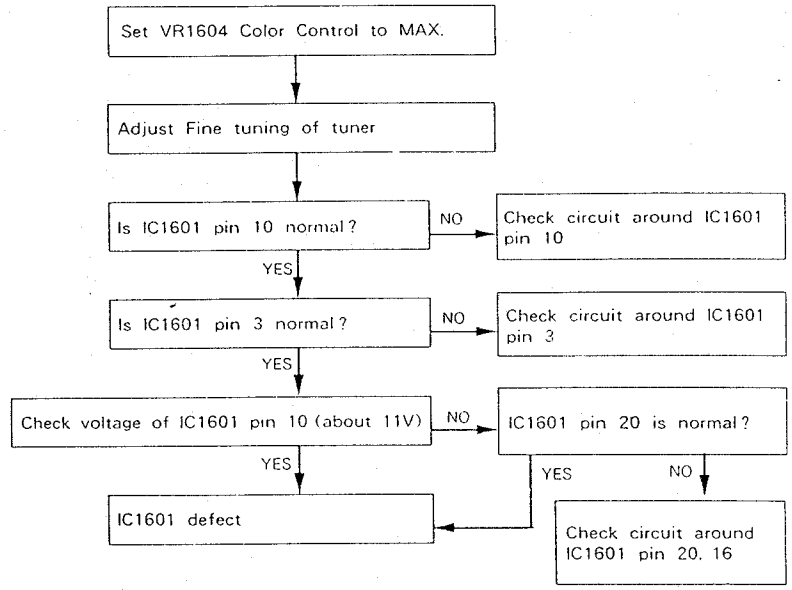
(4) NO RASTER WITH SOUND



5) NO V. DEFLECT (ONLY H. LINE)



6) NO COLOR



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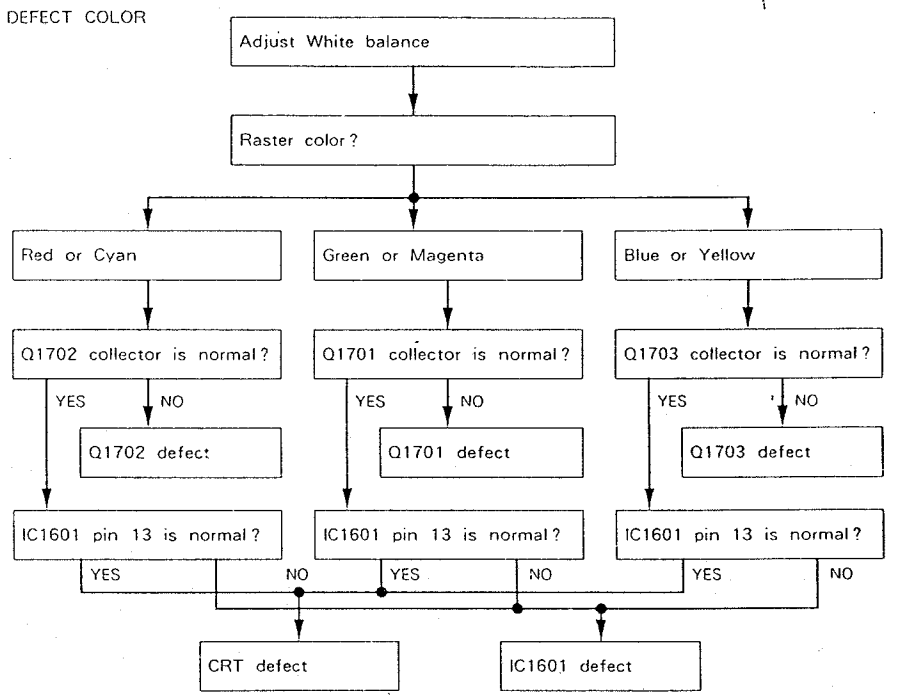
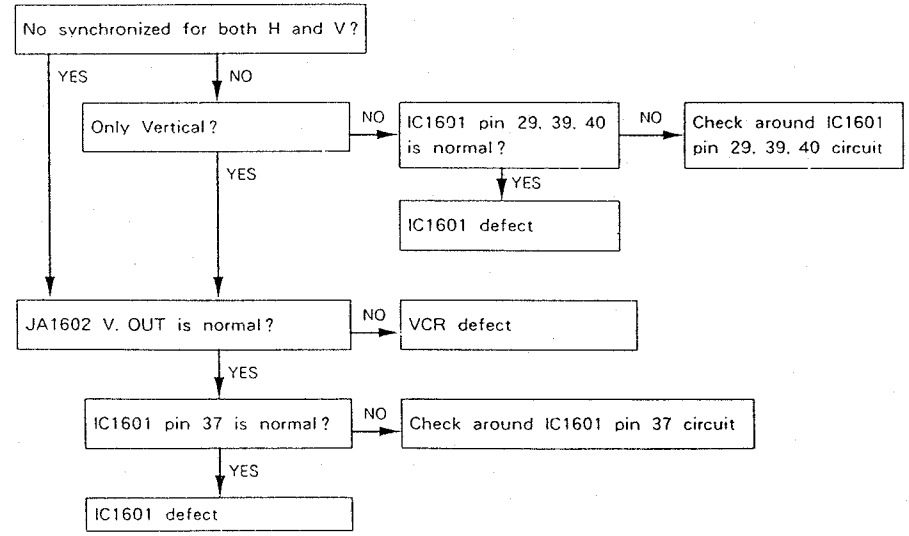
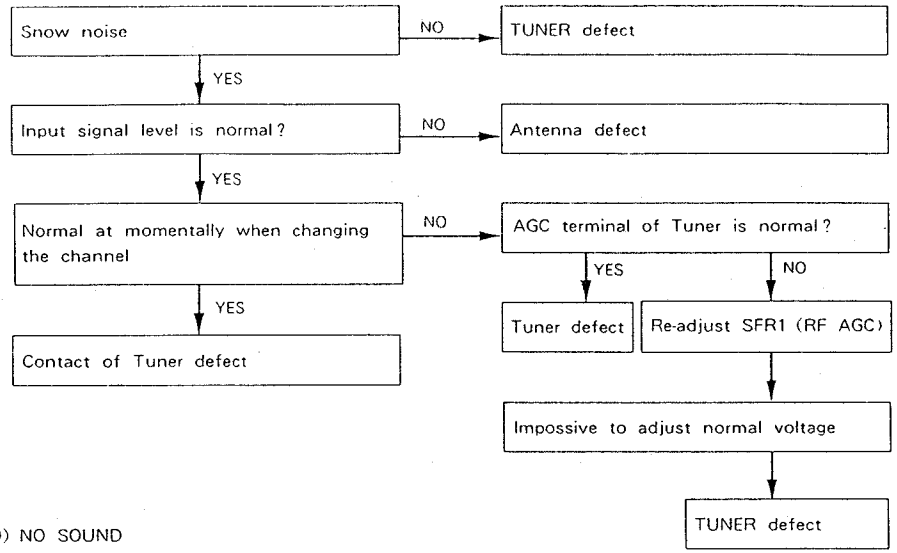
(7) DEFECT COLOR



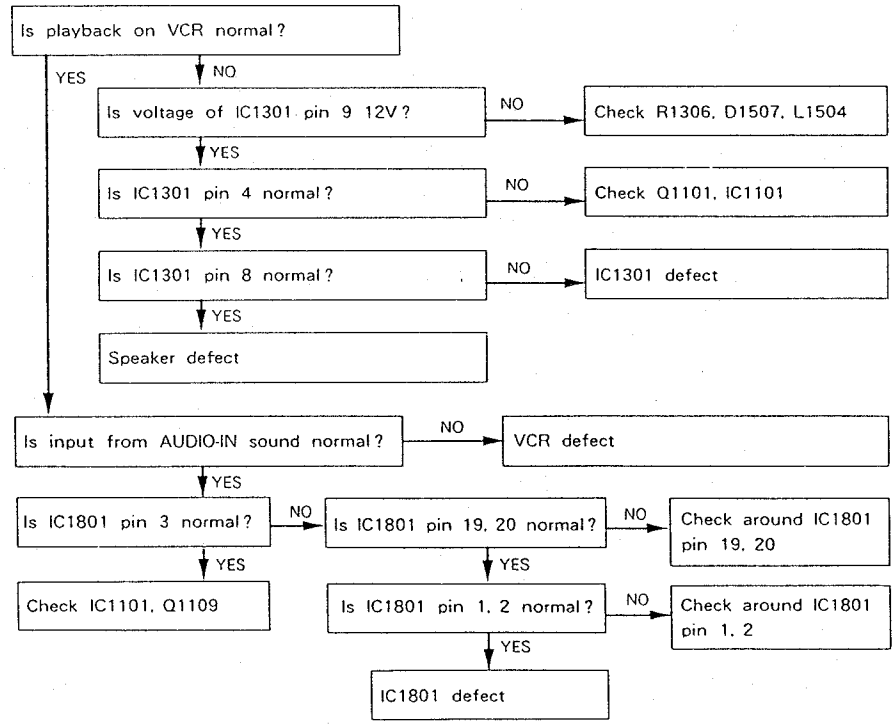
(8) NO SYNCHRONIZED



(9) DIMLY PICTURE



(10) NO SOUND



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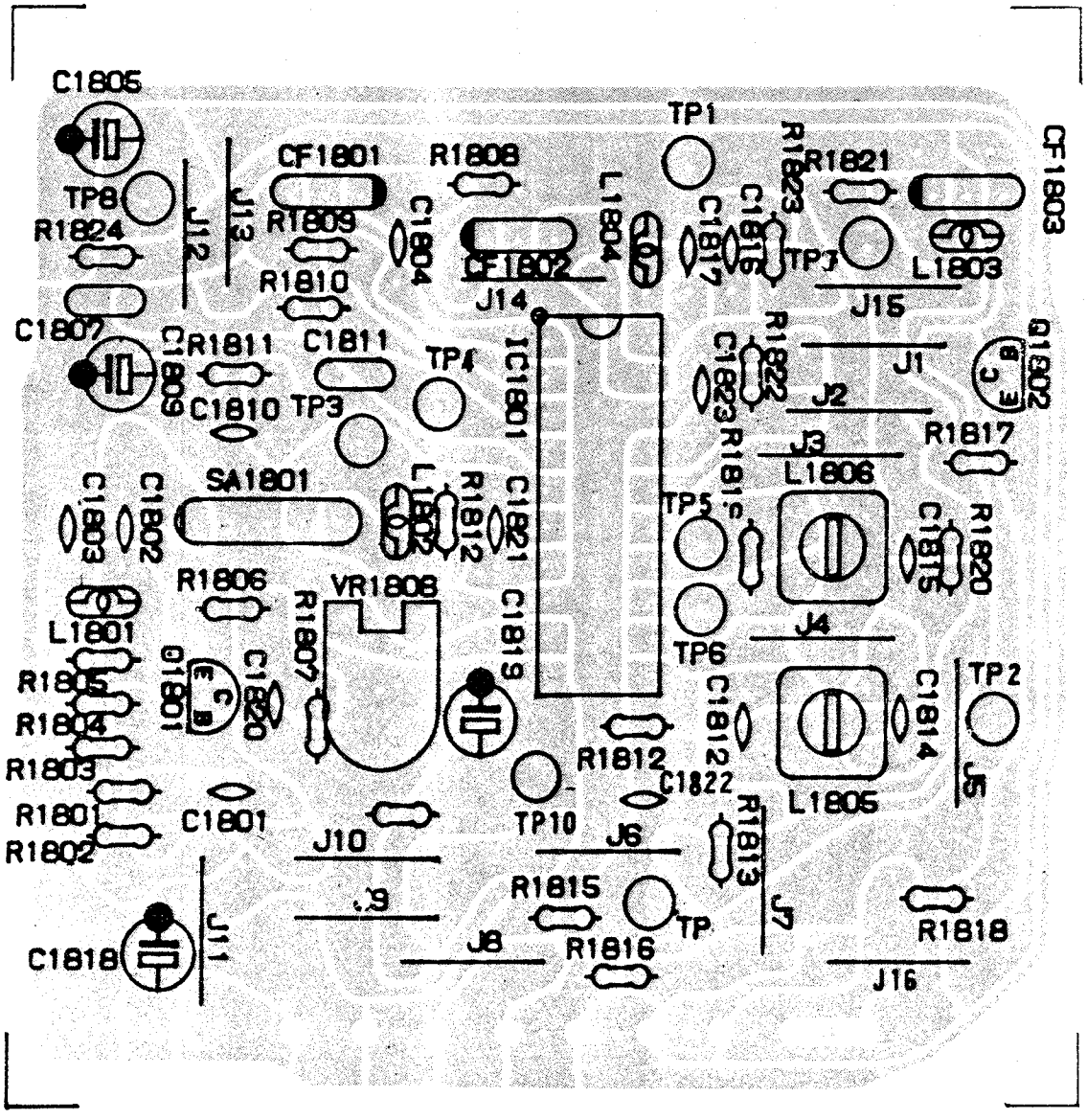
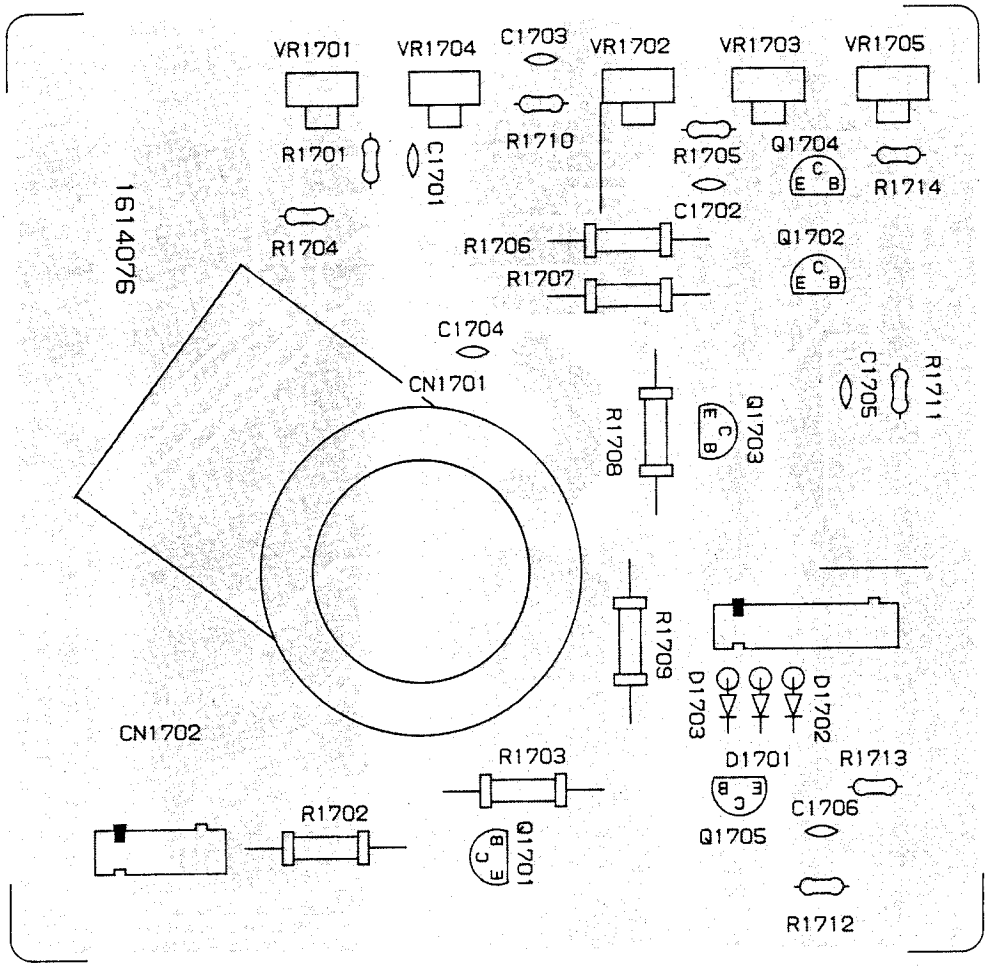
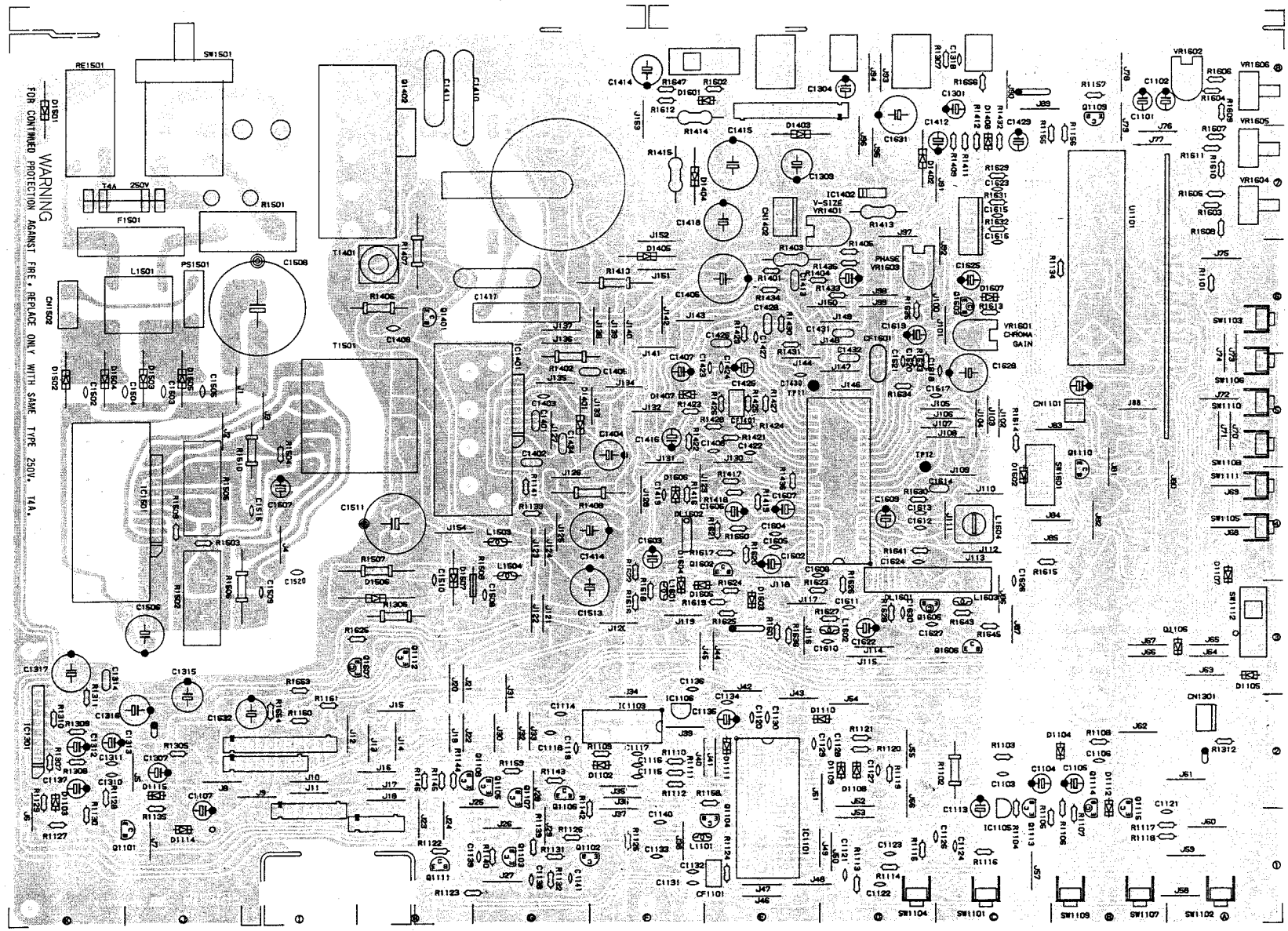
IF PCB
COMPONENT LAYOUT



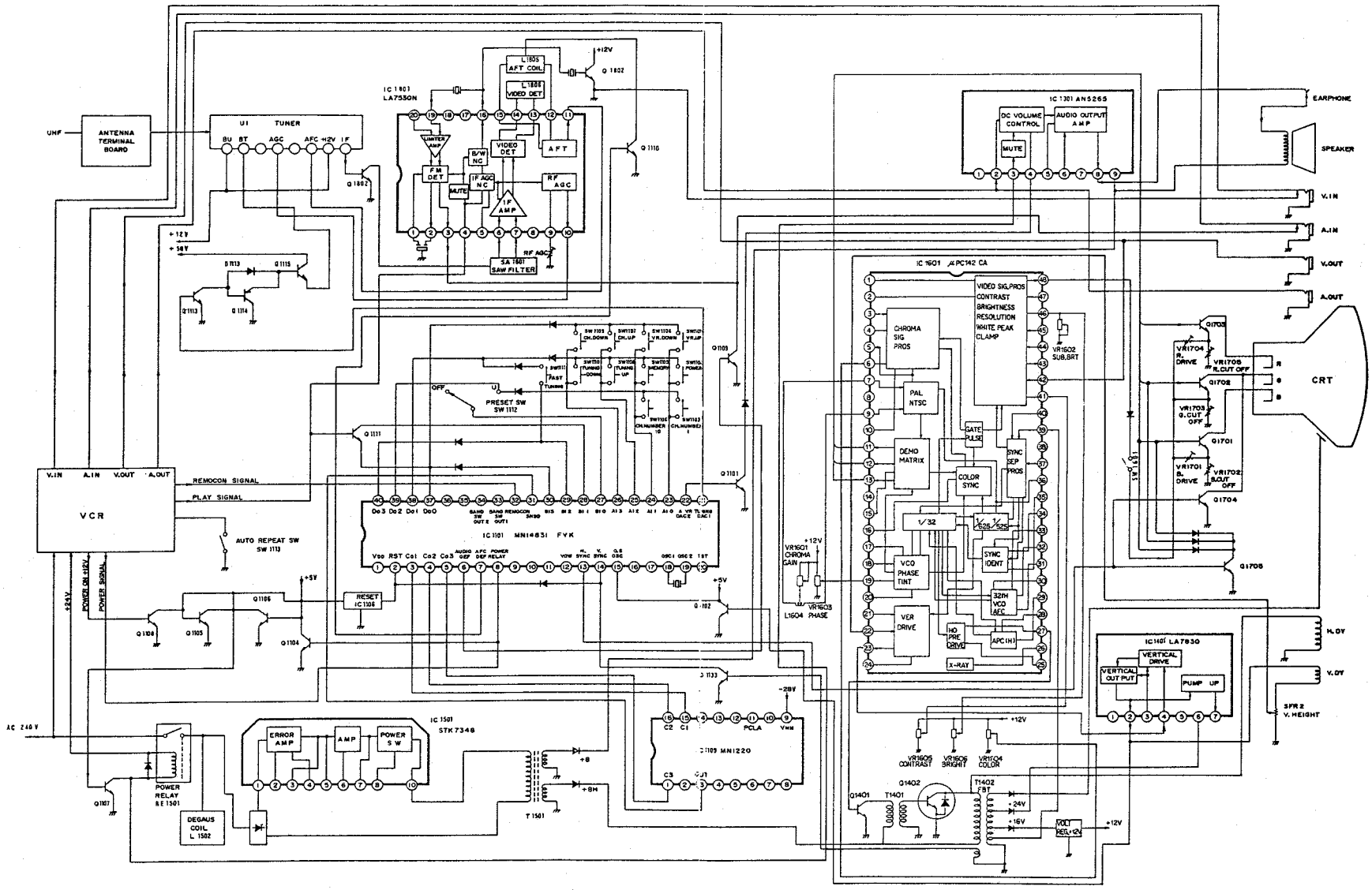
CRT PCB


1614076
VR1701
VR1704
C1703
VR1702
VR1703
VR1705
R1701
C1701
R1710
R1705
Q1704
R1714
C1702
R1704
R1706
Q1702
R1707
C1704
CN1701
C1705
R1711
R1708
Q1703
R1709
D1703
D1702
CN1702
R1703
D1701
R1713
C1706
R1702
Q1701
Q1705
R1712

T.V. SECTION MAIN PCB
(Top View)



T.V. SECTION
BLOCK DIAGRAM



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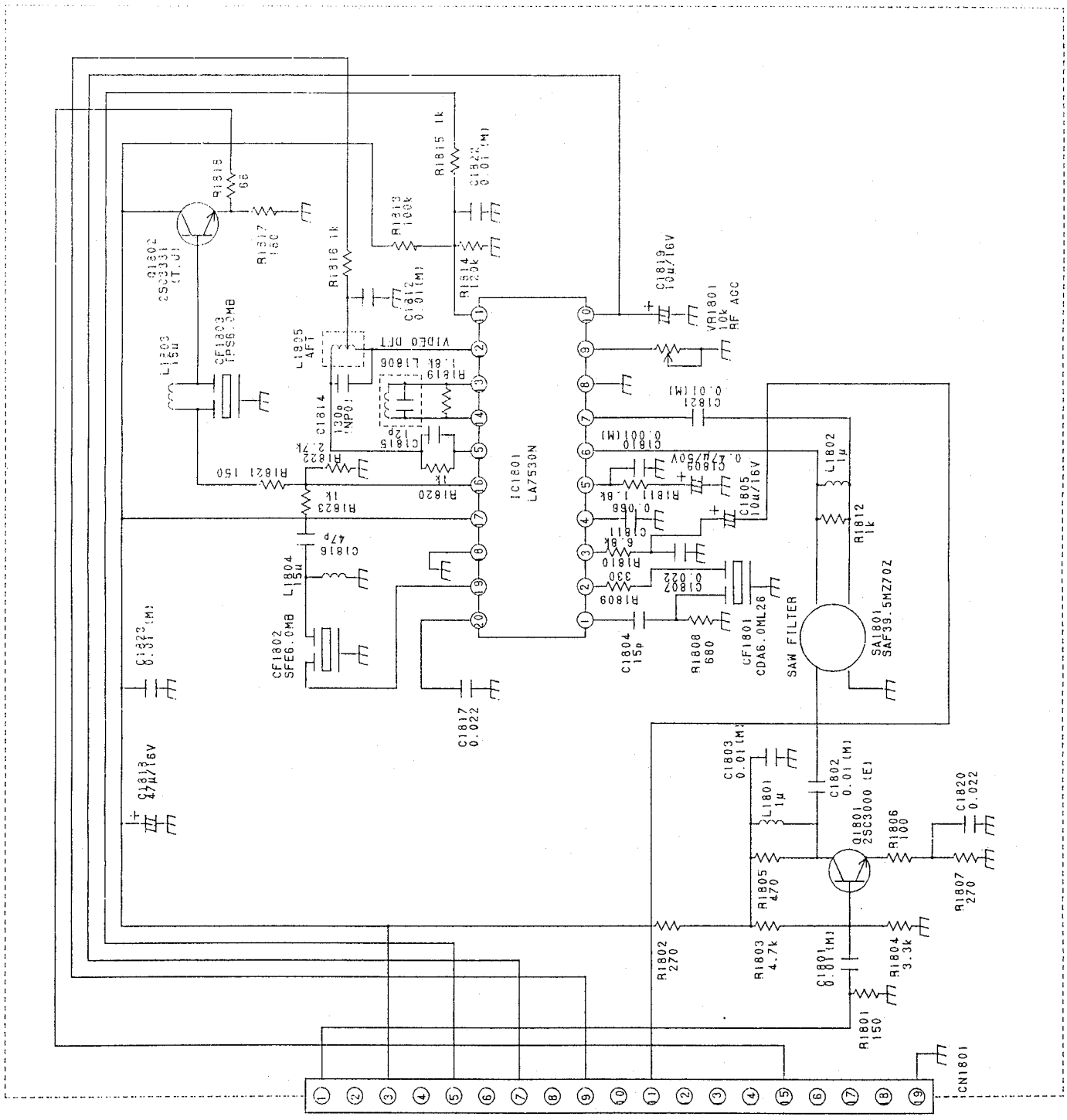
IF P.C.B. SCHEMATIC CIRCUIT DIAGRAM



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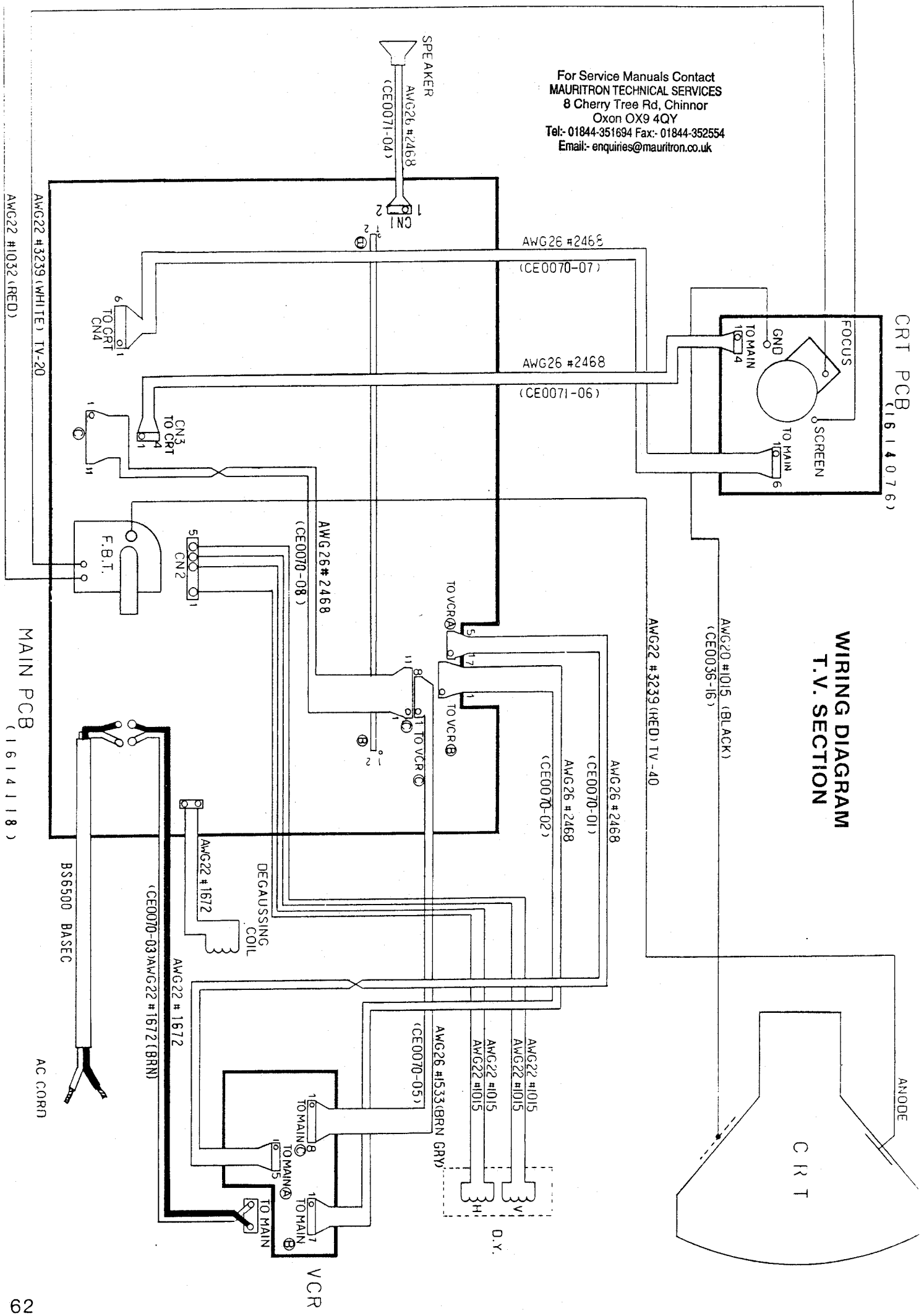
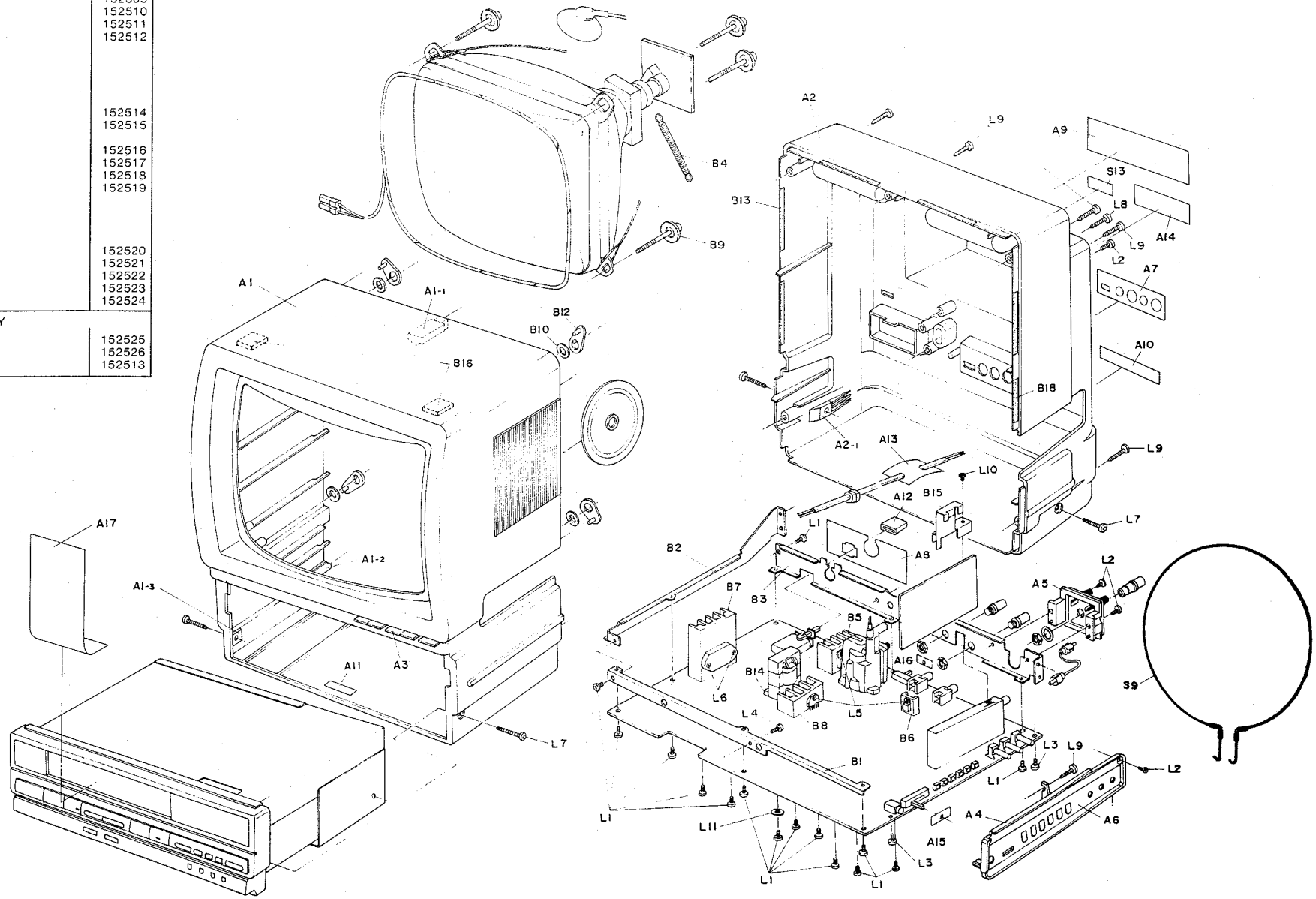
WIRING DIAGRAM
T.V. SECTION



CABINET PARTS LIST

Ref.	Description	Part No.
A1	Front Cabinet	152501
A1-1	Back Cabinet Mounting Boss (A)	152502
A1-2	Back Cabinet Mounting Boss (B)	152527
A1-3	Deck Mounting Boss (C)	152503
A2	Rear Cabinet	152504
A2-1	Rear Mounting Boss (D)	152505
A3	Vol/Ch/Power Knob	152506
A4	Control Holder	152507
A5	Ant. Jack Board	152508
A6	Control Plate	152509
A7	Jack Plate	152510
A8	AC Cord Plate	152511
A9	Rating Plate	152512
A10	User Caution Label	
A11	Serial No. Label	
A12	Main Power Cord	
A13	AC Cord Label	
A14	RFI Requirements Label	
A15	Switch Cover (A)	152514
A16	Switch Cover (B)	152515
A17	Note Label	
B1	Front PCB Holder	152516
B2	Left PCB Holder	152517
B3	Rear PCB Holder	152518
B4	Tension Spring	152519
B5	Heat Sink (A)	
B6	Heat Sink (B)	
B7	Heat Sink (C)	
B8	Heat Sink (D)	
B9	CRT Mounting Screw	152520
B10	CRT Spacer (A)	152521
B12	CRT Rubber Spacer	152522
B14	Switching Transe Spacer	152523
B15	IF PCB Holder	152524
	ACCESSORY	
X1	Remote Control Unit	152525
S9	UNF Antenna	152526
	Flying Head Antenna	152513

EXPLODED VIEW (CABINET)



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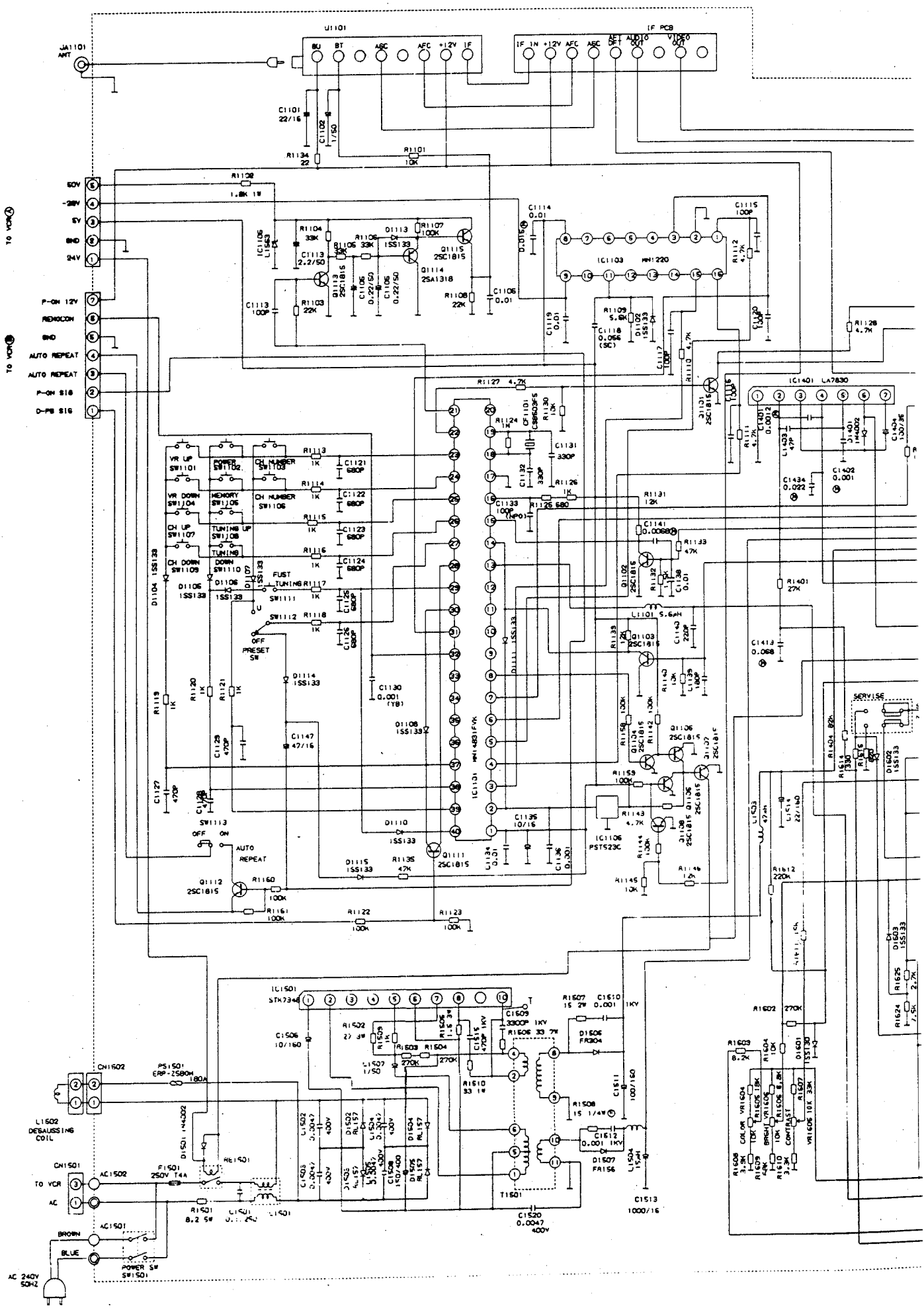
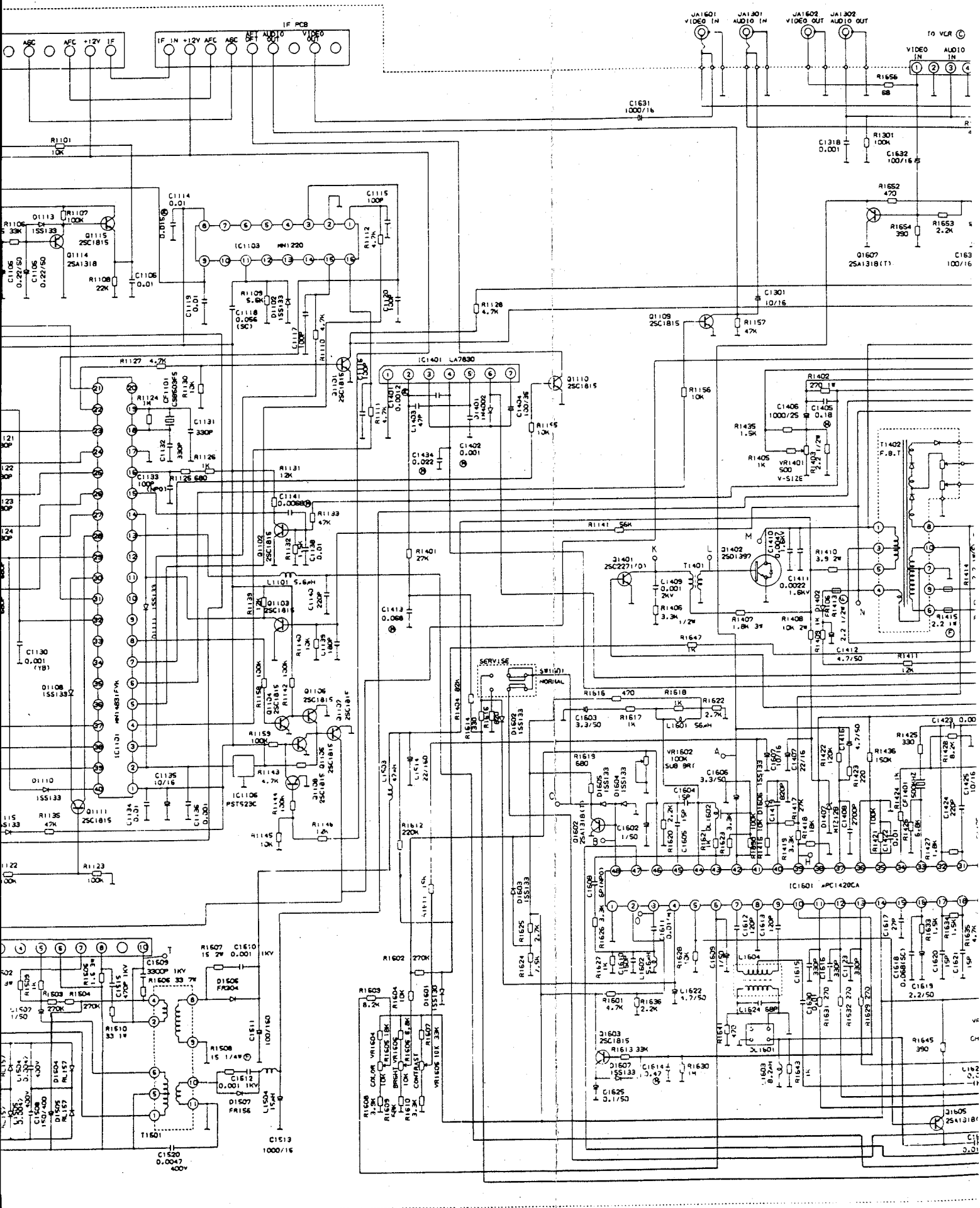


SCHEMATIC CIRCUIT DIAGRAM
T.V. SECTION



TIC CIRCUIT DIAGRAM
T.V. SECTION

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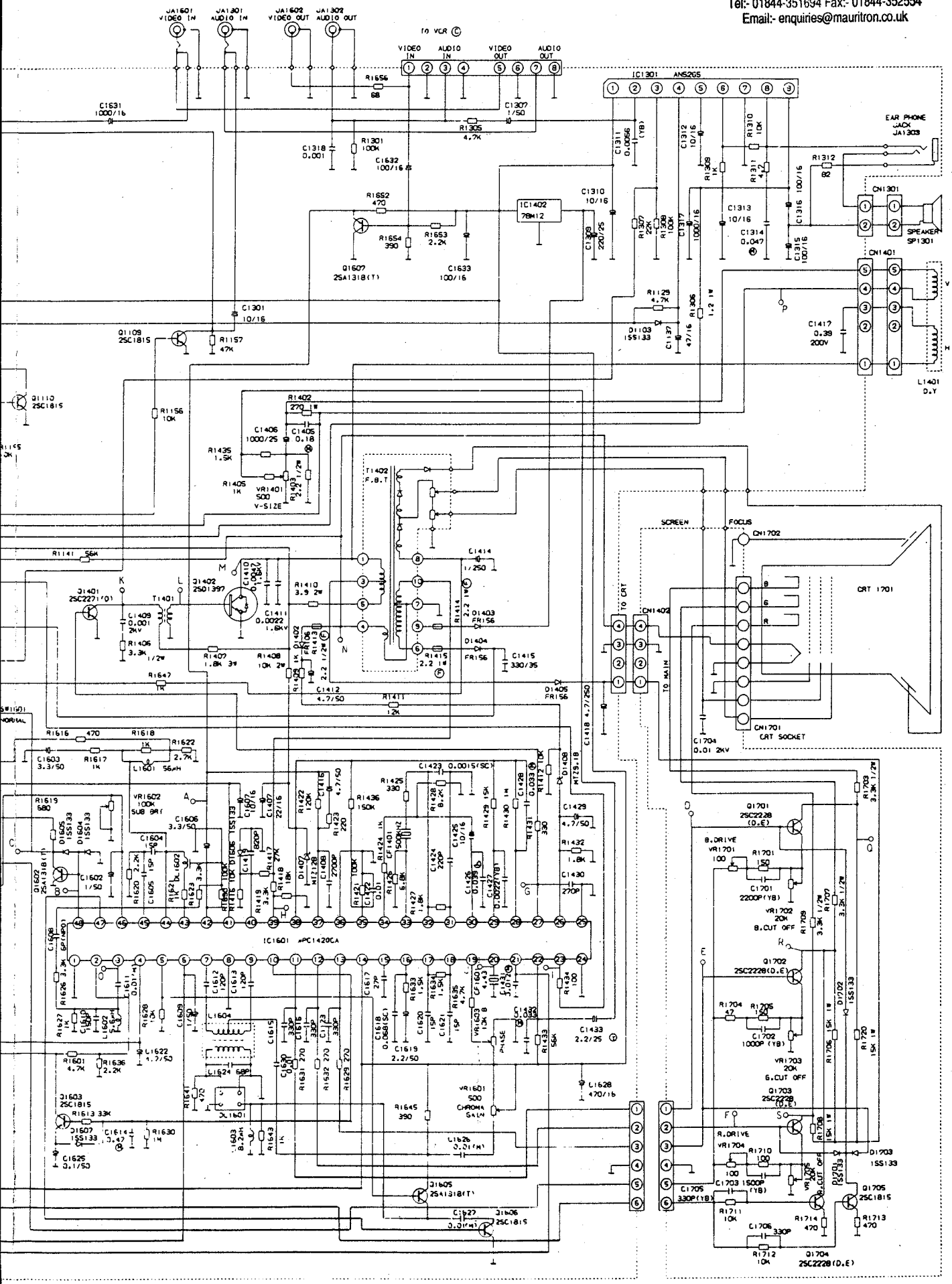

ELECTRICAL PARTS LIST

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Description	Reference No.	Part No.
Carbon Film Resistors (All resistors are 1/6W unless shown otherwise)		
22ohm	R1134	152156
68ohm	R1818	152162
150ohm	R1821	152168
180ohm	R1817	152169
680ohm	R1125	152176
1kohm	R1113 - 1121, 1126, 1815, 1816, 1820, 1823	152179
1.5kohm	R1132	152181
1.8kohm	R1819	152182
2.7kohm	R1822	152184
4.7kohm	R1110-1112, 1127-1129, 1135, 1143	152188
5.6kohm	R1109	152189
10kohm	R1101, 1140, 1145, 1155, 1156	152194
12kohm	R1139, 1131, 1146	152195
22kohm	R1108	152198
33kohm	R1104 - 1106	152200
47kohm	R1157	152203
56kohm	R1133, 1141	152204
100kohm	R1107, 1122, 1123, 1158, 1159, 1160, 1161, 1813	152209
120kohm	R1814	152210
1Mohm	R1124	152223
Metal Oxide Resistors		
1.8kohm	R1102	152528
22kohm	R1103	152529
Electrolytic Capacitors		
0.22uF/50V	C1104, 1105	152546
2.2uF/50V	C1113	151598
10uF/16V	C1101, 1135, 1301	20148
47uF/16V	C1107, 1137	20027
Ceramic Capacitors		
100pF	C1103, 1115-1117, 1120, 1133	24016
180pF	C1139	150492
220pF	C1140	400107
330pF	C1131, 1132	150518
470pF	C1127 - 1129	24004
680pF	C1121 - 1126	806223
1000pF	C1130, 1136	151645
0.01uF	C1106, 1114, 1119, 1134, 1138	810312

Description	Reference No.	Part No.
Semiconductor Capacitors		
0.056uF/50V	C1118	150886
Mylar Capacitors		
0.0068uF/50V	C1141	152547
Carbon Film Resistors (All resistors 1/6W unless shown otherwise)		
4.7ohm	R1311	152146
68ohm	R1656	152162
82ohm	R1312	152164
100ohm	R1806	152166
100ohm ¼W	R1434	10032
150ohm	R1801	152168
220ohm	R1423	152170
270ohm	R1629, 1631, 1632, 1802, 1807	152171
330ohm	R1425, 1431, 1614, 1809	152172
390ohm	R1645, 1654	152173
470ohm	R1616, 1641, 1652, 1805	152174
680ohm	R1619, 1808	152176
820ohm	R1615	152178
1kohm	R1309, 1405, 1409, 1424, 1509, 1617, 1618, 1621, 1627, 1643, 1647, 1812	152179
1.5kohm	R1435, 1633, 1634	152181
1.8kohm	R1427, 1432, 1811	152182
2kohm	R1419	152548
2.2kohm	R1620, 1636, 1653	152183
2.7kohm	R1622, 1625	152184
3,3kohm	R1610, 1623, 1626, 1804	152185
3.9kohm	R1608	152187
4.7kohm	R1303, 1305, 1601, 1635, 1803	152188
6.8kohm	R1426, 1606, 1810	152190
7.5kohm ¼W	R1624	10082
8.2kohm	R1428, 1603	152192
10kohm	R1310, 1412, 1416, 1604, 1628	152194
12kohm	R1411	152195
15kohm	R1429, 1611	152196
18kohm	R1418, 1605	152197
22kohm	R1307	152198
27kohm	R1401, 1417	152199
33kohm	R1607, 1613	152200
56kohm	R1433	152204
68kohm	R1609	152205
82kohm	R1404	152207
100kohm	R1301, 1308, 1421, 1650	152209
150kohm	R1436	152211
220kohm ¼W	R1612	10117
270kohm	R1503, 1504, 1602	152214
1Mohm	R1430, 1630	152223

ELECTRICAL PARTS LIST

Description	Reference No.	Part No.
Metal Film Resistors		
1.2ohm 1W	R1306	152549
2.2ohm ½W	R1403	152550
3.9ohm 2W	R1410	152551
15ohm 2W	R1507	152552
3.3kohm ½W	R1406	152553
Metal Oxide Resistors		
33ohm 1W	R1510	152554
33ohm 2W	R1506	171074
270ohm 1W	R1402	152555
1.8kohm 3W	R1407	152556
10kohm 2W	R1408	152557
Cement Resistors		
1.5ohm 3W	R1515	152558
8.2ohm 5W	R1501	152559
Fuseable Resistors		
2.2ohm ½W	R1413	152560
2.2ohm 1W	R1414, 1415	152561
15ohm ¼W	R1508	152562
Electrolytic Capacitors		
0.1uF/50V	C1625	150908
0.47uF 50V	C1809	151641
1uF/50V	C1304, 1307, 1507, 1602, 1609	20062
1uF/250V	C1414	1422152
2.2uF/50V	C1619	151598
3.3uF/50V	C1603, 1606	152080
4.7uF/50V	C1412, 1416. 1429, 1622	1400240
4.7uF/250V	C1418	1422158
10uF/16V	C1301, 1312, 1313, 1425, 1607, 1805, 1819	20148
10uF/160V	C1506	152563
22uF/16V	C1407	151308
22uF/160V	C1514	1422243
47uF/16V	C1818	20027
100uF/16V	C1315, 1316, 1632	20028
100uF/35V	C1404	1422157
100uF/160V	C1511	1400246
150uF/400V	C1508	152564
220uF/25V	C1309	152565
330uF/35V	C1415	152566
470uF/16V	C1628	1400248
1000uF/16V	C1317, 1513, 1631	20118
1000uF/25V	C1406	152567

Description	Reference No.	Part No.
Ceramic Capacitors		
6pF	C1608	1409183
12pF	C1815	150873
15pF	C1604, 1605, 1620, 1621	152572
22pF	C1804	150511
27pF	C1617	150513
47pF	C1403, 1816	1400208
68pF	C1624	150516
120pF	C1612, 1613	150482
130pF	C1814	152573
150pF	C1610	151304
220pF	C1424	400107
270pF	C1430	150491
300pF	C1623	1422255
330pF	C1615, 1616	150518
470pF/1kV	C1515	152574
820pF	C1419	1400214
1000pF	C1318, 1444	151645
0.001uF	C1810	150518
0.001uF/1kV	C1510, 1512	152568
0.001uF/2kV	C1409	1409188
0.0022uF	C1427	1400216
0.0027uF	C1408	152569
0.0033uF/1kV	C1509	152576
0.0047uF/400V	C1502 - 1505, 1520	1400222
0.0056uF	C1311	152571
0.01uF	C1422, 1611, 1626, 1627, 1630, 1801, 1802, 1812, 1821, 1823	810312
0.022uF	C1310	21027

ELECTRICAL PARTS LIST

Description	Reference No.	Part No.
Mylar Capacitors		
0.001uF/50V	C1402	21020
0.0012uF/50V	C1401	152575
0.012uF/50V	C1431	1422264
0.015uF/50V	C1807	809234
0.022uF/50V	C1434	152625
0.033uF/50V	C1428, 1432	21012
0.039uF/50V	C1427	152576
0.047uF/50V	C1314, 1614	21008
0.068uF/50V	C1413, 1811	809236
0.18uF/50V	C1405	152577
Metalized Capacitors		
0.0022uF/1.6kV	C1411	152578
0.0047uF/1.6kV	C1410	152579
0.039uF/200V	C1417	152580
Tantal Capacitors		
2.2uF/25V	C1433	152581
Semiconductor Capacitors		
0.0015uF/25V	C1423	152582
0.022uF/25V	C1817, 1820, 1822	151585
0.068uF/25V	C1618	152583
Filter Capacitor		
0.1uF/250V	C1501	1400202
Coils & Transformers		
L1101, 1602	Micro Inductor 5.6uH	151738
L1603	Micro Inductor 8.2uH	151739
L1501	Line Filter	151822
L1504	Pot Type Coil 15uH	151821
L1503	Pot Type Coil 47uH	151735
L1601	Micro Inductor 56uH	151823
L1604	Casing Coil 113M647	152584
L1805	Casing Coil 113M644	151820
L1806	Casing Coil 113M646	151734
L1801, 1802	Micro Inductor 109	152585
L1803, 1804	Micro Inductor 150	152586
L1502	Degaussing Coil	152587
L1401*	CRT 370KRB22-TC09	152588
L1401*	CRT 1702B22-TC84	152589
T1401	H Drive Transformer 1150325	152590
T1402	Flyback Transformer 1810951	152591
T1501	Switching Power Transformer 115E475	152592

*PLEASE NOTE: If the tube is replaced you must ensure the following components are correct for their respective tubes.

Ref.	CRT 370KRB22-TC09	CRT 1702B22-TC84
R1701	220ohm	150ohm
R1710	180ohm	100ohm
C1701	820pF	0.022uF
C1702	820pF	0.001uF
C1703	470pF	0.0015uF

Description	Reference No.	Part No.
Diodes		
1SS130	D1601	151727
1SS133	D1102-12, 1114, 1115, 1602-16	150624
1N4002	D1401, 1501	400111
FR106	D1402	152593
FR156	D1403-6, 1507	151724
MTZ12B	D1407	151723
MTZ9.1B	D1408	150625
RL157	D1502-5	151725
FR304	D1506	151726
Transistors		
Q1801	TR 2SC3000	151718
Q1101-13, 1115, 1603, 1606, 1802	TR 2SC3331	170447
Q1114, 1602, 1605	TR 2SA1318	151721
Q1402	TR 2SD1397	1409203
Q1401	TR 2SC2271	1409202
I.C.s		
IC1101	MN14831FVK	152594
IC1103	MN1220	152595
IC1105	L5631	151700
IC1106	PST523C	151703
IC1301	AN5265	151705
IC1401	LA7830	170444
IC1402	UPC78M12	151707
IC1501	STK7348	151708
IC1601	UPC1420CA	151709
IC1801	LA7530N	151704
Filters		
CF1101	Ceramic Resonator	152596
CF1401	Ceramic Resonator 500kHz	152597
CF1601	X'Tal	150660
CF1801	Ceramic Descre CDA6.0ML26	152598
CF1802	Ceramic Filter SFE6.0MB	1400326
CF1803	Ceramic Trap TPS6.0MB	152599
DL1601	Glass Delay ADL-CP-144F-A02	152600
DL1602	Delay Line 113M652	152601

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ELECTRICAL PARTS LIST

Circ. Ref.	Description	Part No.
Miscellaneous		
SA1801	Saw Filter SAF39.5MZ70Z	152602
F1502	(Fuse) 4A 250V	152603
RE1501	Power Relay	152604
PS1501	Posistor	152605
CN1701	CRT Socket	152606
JA1101	IEC Ant. Jack	152607
JA1301	Earphone Jack	152608
JA1302, 1303	RCA Jack	152609
JA1601, 1602	BNC Jack	152610
SP1301	Speaker	152611
Switches		
SW1101-11	Tact Switch	152612
SW1112	Slide Switch	152613
SW1113	Slide Switch	152613
SW1501	Power Switch	152614
SW1601	Slide Switch	900101
Variable Resistors		
VR1401, 1601	Semi Fixed Res 500ohm	152615
VR1602	Semi Fixed Res 100kohm	152616
VR1603	Semi Fixed Res 10kohm	152617
VR1604-1606	Rotary Res 10kohm	152618
Carbon Film Resistors (All ¼W unless shown otherwise)		
47ohm	R1704	10020
100ohm	R1710	10032
150ohm	R1701, 1705	10036
470ohm	R1713, 1714	10048
10kohm	R1711, 1712	10085
Metal Film Resistors		
3.3kohm/½W	R1703, 1707, 1709	152553
Metal Oxide Resistors		
15kohm/1W	R1706, 1708	152619
Ceramic Capacitors		
330pF	C1705, 1706	200520
0.001uF	C1702	150518
0.0015uF	C1703	152624
0.01uF	C1704	810312
0.022uF	C1701	200524
Diodes		
D1701-3	1SS133	150624
Transistors		
Q1701-4	2SC2228	152620
Q1705	2SC3331	152621
Variable Resistors		
VR1701, 1704	Semi Fixed Res 100ohm	152622
VR1702, 1703, 1705	Semi Fixed Res 20kohm	152623

VOLTAGE CHART

Operation :

Input Signal	Full color bar signal
Brightness	Maximum
Contrast	Maximum
Color	Maximum
Volume	Minimum

TR NO	TR TYPE	E	C	B	REMARK
Q1101	2SC3331 (T, U)	0	5.0	0.2	
Q1102	2SC3331 (T, U)	0	4.7	0.3	
Q1103	2SC3331 (T, U)	0	4.2	−0.2	
Q1104	2SC3331 (T, U)	0	0	0.6	
Q1105	2SC3331 (T, U)	0	0.7	0	
Q1106	2SC3331 (T, U)	0	0.7	0	
Q1107	2SC3331 (T, U)	0	0	0.7	
Q1108	2SC3331 (T, U)	0	0	0.6	
Q1109	2SC3331 (T, U)	0	0	0	
Q1110	2SC3331 (T, U)	0	3.8	0	
Q1111	2SC3331 (T, U)	4.2	5.0	0.1	
Q1112	2SC3331 (T, U)	0	0	0.6	
Q1113	2SC3331 (T, U)	0	2.3	0.6	
Q1114	2SA1318 (T)	3.0	0	2.4	
Q1115	2SC3331 (T, U)	2.5	32.0	3.0	
Q1401	2SC2271 (D)	0	74.0	0.3	
Q1402	2SD1397	0	−0.1	117.0	
Q1602	2SA1318 (T)	6.8	0	6.4	
Q1603	2SC3331 (T, U)	10.9	12.0	11.3	
Q1605	2SA1318 (T)	8.9	0	8.3	
Q1606	2SC3331 (T, U)	0	0	0.1	
Q1607	2SA1318 (T)	2.5	0	1.8	
Q1801	2SC3000 (E)	3.0	9.2	3.7	
Q1802	2SC3331 (T, U)	4.9	11.7	5.6	

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IC NO	IC1101	IC1103	IC1105	IC1106
PIN	MN14831FVK	MN1220	L1563	PST523C
1	5.0	0	3.2	5.0
2	5.0	0	0	0
3	5.0	1.3		5.0
4	0	NC		
5	0	NC		
6	0	NC		
7	0	NC		
8	4.8	5.0		
9	NC	-29.0		
10	NC	NC		
11	NC	0		
12	NC	NC		
13	0	NC		
14	4.2	NC		
15	4.6	5.0		
16	2.9	0		
17	0			
18	2.3			
19	2.5			
20	NC			
21	4.3			
22	1.5			
23	5.0			
24	5.0			
25	5.0			
26	5.0			
27	5.0			
28	5.0			
29	2.6			
30	4.1			
31	0.8			
32	5.0			
33	NC			
34	NC			
35	NC			
36	NC			
37	4.2			
38	4.9			
39	4.9			
40	2.4			

IC NO	IC1301	IC1401	IC1402	IC1501	IC1601
PIN	AN5265	LA7830	μ PC78M12	STK7348	μ PC1420CA
1	12.0	0	16.0	40.0	0
2	5.3	13.7	0	0	3.8
3	0	23.3	12.0	−0.2	5.0
4	7.3	0.9		33.0	8.5
5	5.3	0.7		0	8.4
6	5.3	23.0		0	5.0
7	0	1.8		−0.4	4.3
8	5.4			0.2	0
9	12.0			NC	4.3
10				0.4	11.3
11					7.0
12					7.1
13					7.1
14					12.0
15					5.0
16					6.3
17					8.8
18					8.8
19					5.8
20					5.2
21					0.4
22					3.4
23					0.9
24					0
25					0
26					0
27					0.5
28					6.8
29					5.9
30					3.4
31					4.7
32					4.7
33					8.8
34					0
35					7.1
36					0
37					7.7
38					11.2
39					0
40					0
41					4.1
42					2.4
43					9.0
44					10.0
45					5.6
46					8.2
47					0.1
48					6.4

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